

Medical TIMES

JOURNAL OF CLINICAL PRACTICE

Diabetes Mellitus

① Metabolism and Hemochromatosis

**Incidence Aspects of Common
Dermatoses**

The Rx Problem

Erythroblastosis Fetalis

Focus on Sinusitis

Medical

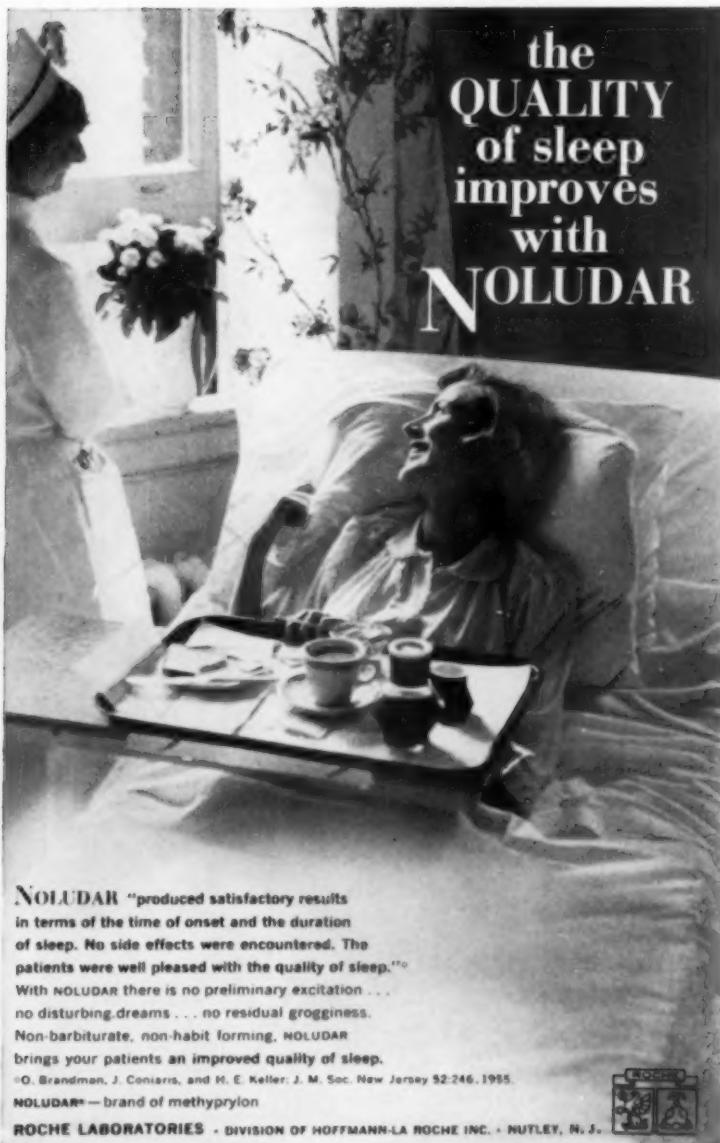
Testing

Medical At The Cross-roads

Emergency Care

Medical in Perspective





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of sleep
improves
with
NOLUDAR

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¹O. Brandman, J. Coniaris, and H. E. Keller. J. M. Soc. New Jersey 52:246, 1955.

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the sneeze
the cough
the aches
the fever

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the only such preparation to
contain penicillin V to curb
bacterial complications...

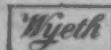
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- antipyretic
- antihistaminic
- mood-stimulating

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Penicillin V, Salicylamide, Promethazine Hydrochloride, Phenacetin, Mephentermine Sulfate


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Philadelphia 1, Pa.

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EPA

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Medical Times is published monthly by Romaine Pierson Publishers, Inc., with publication offices at 34 North Crystal Street, East Stroudsburg, Pa. Executive advertising and editorial offices at 1447 Northern Boulevard, Manhasset, L. I., N. Y. Accepted as controlled circulation publication at East Stroudsburg, Pa. & Manhasset, N. Y. Postmaster: If undelivered, please send form 3579 to Medical Times, 1447 Northern Boulevard, Manhasset, Long Island, New York.



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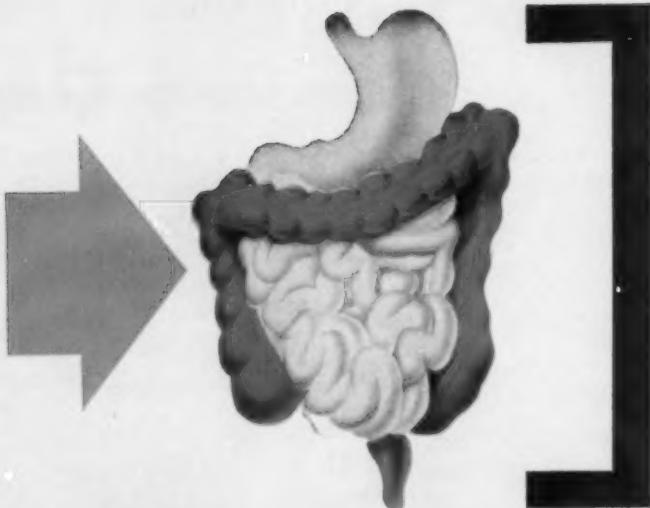
Reference: 1. J.A.M.A. 158:386 (June 4) 1955.

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relief for localized or generalized G.I. disorders

"...the most effective available colonic anticholinergic drug."¹

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(1) Kleckner, M. S., Jr.: J. Louisiana M. Soc. 108:359, 1956. (2) Riess, J. A.: Am. J. Gastroenterol. 28:541, 1957. (3) Settel, E.: J. Am. Geriatrics Soc. In press. (4) Jefferson, N. C., and Neches, H.: J. Urol. 76:651, 1956. (5) Neches, H., and Kirshen, M. M.: The Physiologic Basis of Gastrointestinal Therapy, New York, Grune & Stratton, Inc., 1957, p. 88.

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Niacinamide	5 mg.
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AVAILABILITY: Packages of 10 and 20.

1. Granberry, C., and Beatrous, W.P. E.E.N.T. Mo. 36:294 (May) 1957.
2. Rennhouse, E.A. E.E.N.T. Mo. 36:406 (July) 1957.
3. Fox, S.L. Clin. Med. 4:699 (June) 1957.

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Milprem®
-400

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400 mg. MILTOWN® + 0.4 mg. CONJUGATED
ESTROGENS (equine)

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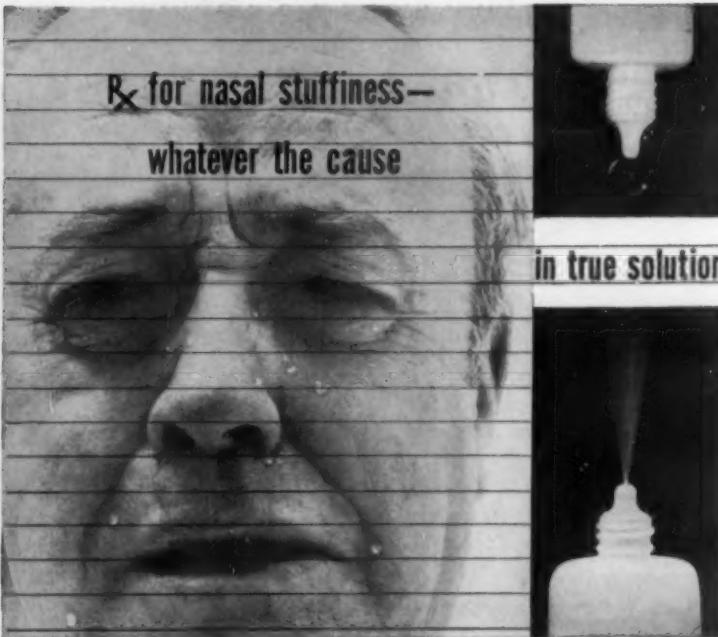
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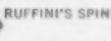
THE ANATOMY OF TOUCH

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PACINI'S CORPUSCLES

RUFFINI'S SPINDLES



Within the remarkably attuned somesthetic system, an elaborate network of nerves makes up the structure of touch: the spindles of Ruffini perceive heat; Pacinian corpuscles discern pressure; Meissner's touch corpuscles transmit sensations. This sensitive system enables the sculptor's hands to shape his eye's image.

Nowhere is sensitivity more important or appreciated than in the choice of a prophylactic—"built-in" sensitivity characterizes RAMSES® tissue-thin prophylactics. RAMSES are preferred by men because they are naturally smooth, demonstrably thin, transparent . . . designed fully to retain natural sensitivity. Yet they are amazingly strong.

In the presence of trichomoniasis, many physicians now routinely specify prophylactics to prevent husband-wife reinfection. ". . . Trichomonas vaginalis in the male is the principal factor of re-infection in the female. . . ."¹ Husbands will cooperate more readily in the treatment plan for wives if you specify RAMSES, the prophylactic with "built-in" sensitivity.

1. Feo, L. G., et al.:
J. Urol. 75:711 (April) 1956.

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THE INCIDENCE AND SEVERITY OF DEGENERATIVE DISEASE CAN BE LESSENED BY CAREFUL NUTRITIONAL BALANCE AND PROPER CONTROL OF METABOLIC ACTIVITY THROUGHOUT THE LIFE SPAN. *

Chapman, L. E.: J. Am. Geriatrics Soc. 6:269, 1958

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Vitamin B₆ crystalline 5 mcg.
Vitamin B₆ (riboflavin) 10 mg.
Vitamin B₁ (pyridoxine hydrochloride) 2 mg.
Vitamin B₁ mononitrate 10 mg.
Nicotinamide (niacinamide) 100 mg.
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Vitamin A . . . (7.5 mg.) 25,000 units
Vitamin D . . . (25 mcg.) 1,000 units
Vitamin E (d-alpha-tocopheryl-acetate concentrate) 5 I. U.

Eleven minerals (as inorganic salts):

Iodine	0.15 mg.
Manganese	1.0 mg.
Cobalt	0.1 mg.
Potassium	5.0 mg.
Molybdenum	0.2 mg.
Iron	15.0 mg.
Copper	1.0 mg.
Zinc	1.5 mg.
Magnesium	6.0 mg.
Calcium	105.0 mg.
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Bottles of 30, 100, 250, and 1,000.	

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THIS PATIENT IS GETTING "INJECTION EQUIVALENT" ANDROGEN

You can take advantage of buccal vascularity for rapid, efficient, thorough absorption of androgen. Metandren Linguets offer the therapeutic equivalent of intramuscular androgen, without painful injections, local reactions, irregular doses or lost working hours.

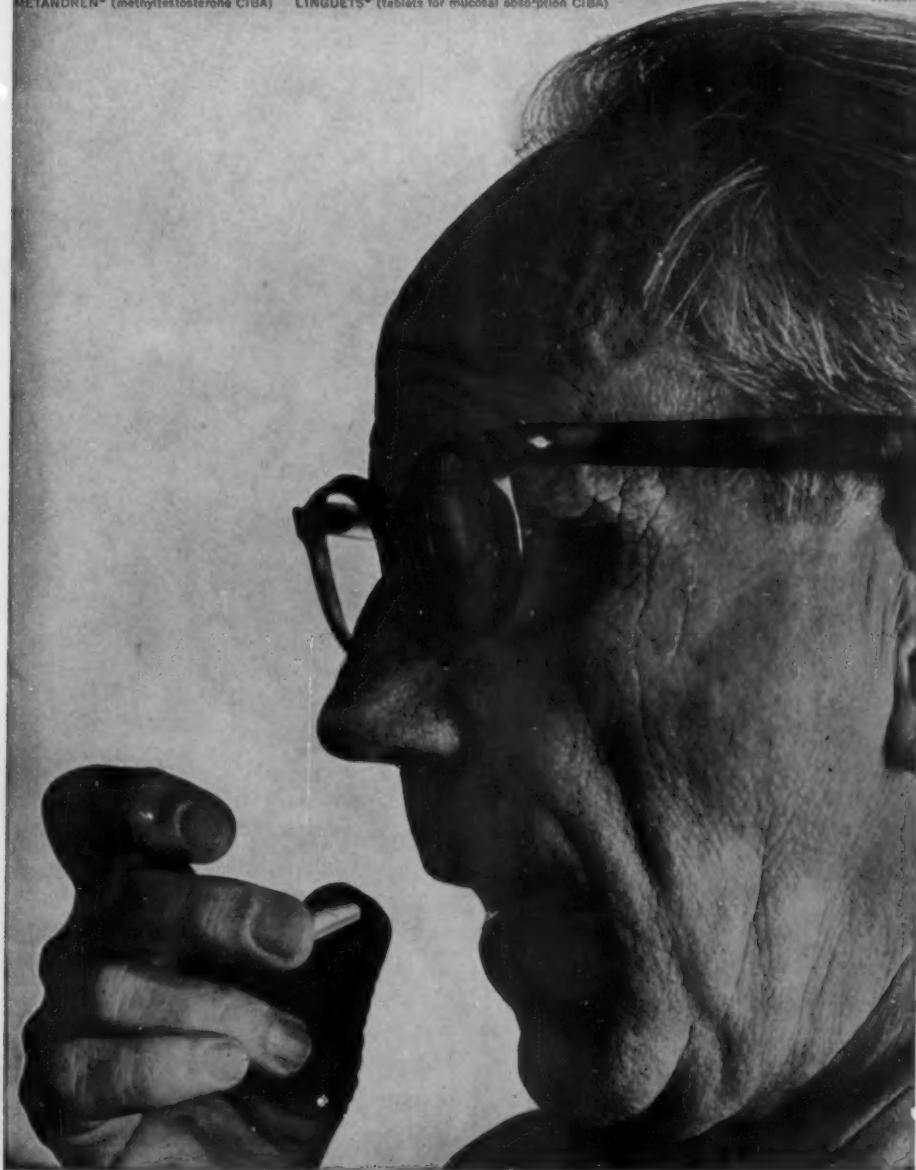
In Males climacteric, impotence, angina pectoris. In Females menopause, frigidity, premenstrual tension and dysmenorrhea, functional uterine bleeding. In Both for anabolic effects and chronic debility after: severe injury, prolonged illness, major surgery, severe malnutrition, severe infection.

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SUPPLIED: LINGUETS 5 mg. (white, scored) and 10 mg. (yellow, scored)

C I B A SUMMIT, N. J.





Off the Record...

True Stories From Our Readers

Each incident described has been contributed by one of our readers. Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

No Way Out

I recently operated on an 11-year-old boy for appendicitis. While making rounds on the third post-operative day, I told the nurse that this was the day for his enema.

After leaving the room, the boy called the nurse back and said, "Say, is there some other way to take it than the way you gave it to *that* boy (pointing to the boy in the next bed)?"

E. D. C., M.D.
Cape Girardeau, Mo.

Skinned

Nine year old Nancy is quite pleased with being able to pick up medical terminology and use it.

Last night at dinner she asked, "Daddy, isn't that other word for skin Nicodemus?"

"No," I replied, "it is epidermis."

She colored slightly, then said, "Oh——, today at school Linda and I teased a boy by saying, 'Steve! Your Nicodemus is showing!'"

H.R.S., M.D.
Stillwater, Okla.

Surprise

My undergraduate training in Medical School included home maternity care, with the Senior medical student in charge. He was assisted by a Junior medical student, and an RN (City Health Nurse). The very first home delivery during my Junior year was apparently very normal except that the newborn infant was quite small, and the baby needed some special care from the nurse and me. The Senior student was a very attentive and careful young man, giving expert care to the mother, who was busily engaged in the agonies of "uterine contractions, in preparation for the delivery of the placenta." The nurse and I were suddenly startled by a profound announcement from the Senior, who cried loudly but plainly, "My God, the placenta is calcified." This seemed quite an unusual development, and certainly we were anxious to see this extremely rare condition, so the nurse and I turned our attention to the events occurring nearby. Then, as we approached the bedside, the Senior stu-

—Concluded on page 29a

In smooth muscle spasm...

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Pro-Banthine—

*unexcelled for relief of cholinergic spasm—
has been combined with*

Dartal—

*new, well-tolerated agent for stabilizing emotions—
to provide you with*

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for more specific control of functional gastrointestinal disorders, especially those aggravated by emotional tension.

Specific Clinical Applications: Functional gastrointestinal disturbances, pylorospasm, peptic ulcer, gastritis, spastic colon (irritable bowel), biliary dyskinesia.

Dosage: One tablet three times a day.

Availability: Aqua-colored tablets containing 15 mg. of Pro-Banthine (brand of propantheline bromide) and 5 mg. of Dartal (brand of thiopropazate dihydrochloride).

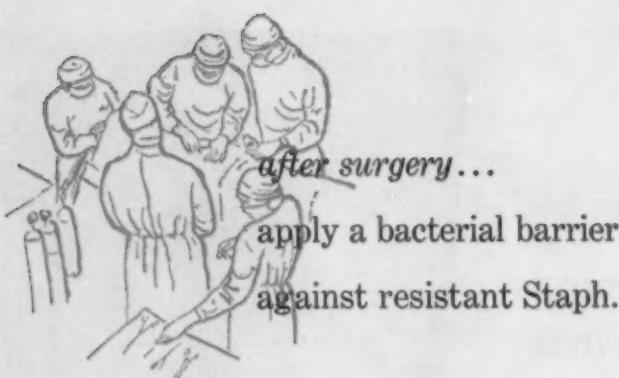
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stress
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"The Use of Aeroplast Dressing in Surgical Wounds," is available for showings on request.

12 oz. 3 oz. 6 oz.



Rx is not required.



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dent was greeted by two bright and sparkling little eyes, and these were followed by the nose, the mouth, the chin, and then the entire body of the second of twins, which had not been anticipated. The placental calcification theory went out the window, and we settled down to the dubiously joyful endeavor of attending two young Americans, instead of one. The Senior student, it turned out, completed his medical training, and as a matter of fact, became one of the outstanding obstetricians in his area. I have not seen a calcified placenta in seventeen years of general practice.

H.D.W., M.D.
Hugo, Okla.

Sound Mind, Sound Body

After taking a history from Mike, who was of foreign extraction and who had some language difficulties, I asked him: "Mike, how are you physically?" Mike answered immediately: "Oh, fine; two times a day, nice and soft!"

(Mike needed no additional "roughage.")

M.E.F., M.D.
Chicago, Ill.

Sad Sack

This incident occurred during Prohibition days. I had just returned from a two weeks' course in Chicago when my secretary said, "I have that stuff you ordered and it's hidden in the laboratory. I didn't have the \$65.00 on hand, but the man wouldn't leave it so I gave him \$10.00 of my own money. He had on a porter's uniform and

said you knew he could get the real stuff."

So we hauled it out and it was a case labeled "Four Roses." It was suspiciously light and we discovered it was filled with potatoes. We had a good laugh, and I said to my secretary, "You charge \$10.00 to your education in the facts of life . . . and that's a record price for potatoes!"

J.F., M.D.
Youngstown, Ohio

About Face

One morning, during our last presidential campaign, our chief surgeon was expounding on the virtues of our democratic system for the benefit of an Austrian intern who had recently arrived from Europe.

"Did you hear the candidate's speech last night?" he queried with enthusiasm.

"Oh yes," replied the intern, "and what did you think of his remark about foreign policy?"

"Well," replied the surgeon, hesitantly, "I ah, didn't hear the speech—I wanted to see the fights!"

W.E., M.D.
Trenton, N. J.

Bargain Day

A patient of mine was to come in and bring a urine specimen, so she told the receptionist that the Doctor had told her to come in, he wanted to do a "special" on her kidneys.

W.T.A., M.D.
Gainesboro, Tenn.

congestive

DIURIL®

CHLOROTHIAZIDE

BECKER, M. C., Simon, F. and Bernstein, A.: J. Newark Beth Israel Hosp. 9:58 (January) 1958.

"On chlorothiazide the response was striking with . . . improvement in cardiac status and loss of toxic symptomatology. . . . One of the most important effects of the potent oral diuretic was the smooth continuous diuresis. There was less fluctuation in the weight . . . marked diminution in the number of acute episodes of congestive heart failure such as paroxysmal dyspnea and pulmonary edema. . . . [DIURIL] appeared as potent a diuretic as parenteral mercurials and indeed in some patients it was effective when parenteral mercurials failed. . . . We have encountered no patient who once responsive to chlorothiazide later developed resistance to it."

DOSAGE: one or two 500 mg. tablets DIURIL once or twice a day.

SUPPLIED: 250 mg. and 500 mg. scored tablets DIURIL (chlorothiazide); bottles of 100 and 1,000.

MERCK SHARP & DOHME Division of MERCK & CO., Inc., Philadelphia 1, Pa.



failure

markedly relieves
pulmonary
edema



ANY INDICATION FOR DIURESIS IS AN INDICATION FOR DIURIL

The man
with an
ulcer
came
to dinner



... free to choose any cuisine

... came and went without discomfort or pain

After prolonged clinical trials, Rosenblum reports: "Adequate relief was obtained in 97 per cent of the [145] patients treated with [PEPULCIN] and a full diet. . . . All patients who benefited had relief within 24 to 48 hours . . . and in practically all cases were symptom-free during the period of study. The clinical response was supported by follow-up roentgen studies."¹

- combines antisecretory, antacid, antihemorrhagic actions
- requires but few doses daily
- shows no evidence of blood, renal, or hepatic toxicity

Rosenblum, L.A.: Am. J. Gastroenterol. 28:507 (Nov.) 1957.

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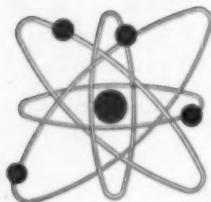
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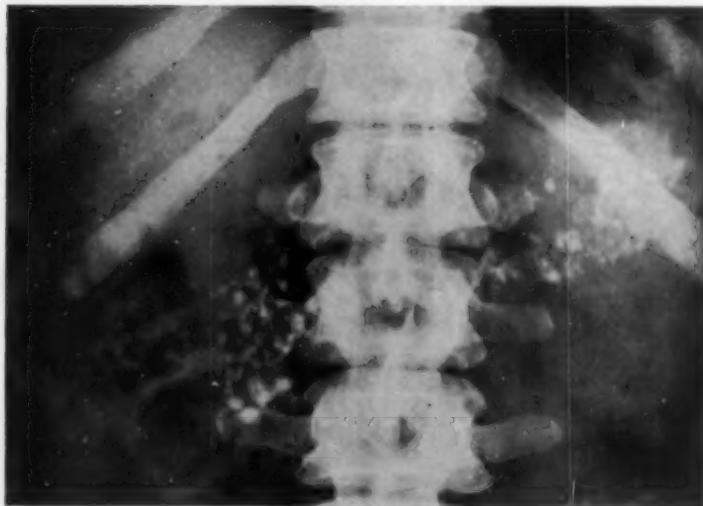
Diagnosis, Please!

Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology,
New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

WHICH IS YOUR DIAGNOSIS?

- 1. Calcified mesenteric nodes
- 2. Pancreatic calculi
- 3. Renal calculi
- 4. Gastric contents

(Answer on page 198a)



Cardiovascular Disorders

As an adjunct to appropriate specific treatment, EQUANIL gives rapid, essential control of the psychic tensions that intensify and complicate cardiac and cardiovascular symptoms. "On control of the emotional complications [with EQUANIL in 41 varied patients], treatment in every case was less intensive and prolonged than ordinarily would have been expected."¹

1. Friedlander, H.S.: Am. J. Cardiol. 7:395 (March) 1968.



Equani**l**
Meprobamate

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Relieves tension—mental and muscular

IT IS SO REWARDING
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SO EASY
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"WIDE SAFETY MARGIN"

Gitaligin®
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REWARDING BECAUSE—Gitaligin provides safe, smooth, controlled cardiac therapy.

AVERAGE THERAPEUTIC DOSE IS ONLY 1/3 THE TOXIC DOSE.* The average therapeutic dose of other digitalis preparations is approximately 2/3 the toxic dose.

ELIMINATION IS FASTER than that of digitoxin or digitalis leaf. Therefore, toxicity, should it inadvertently occur, would be of much shorter duration than with either one of these preparations.

EASY BECAUSE—You can easily maintain uninterrupted control of your cardiac patients when you transfer them to Gitaligin by following the simple dosage equivalents listed below.

APPROXIMATE DOSAGE EQUIVALENTS

DIGITALIS PREPARATION	AVERAGE DAILY MAINTENANCE DOSE	GITALIGIN DOSAGE EQUIVALENT
DIGITALIS LEAF	0.1 GM.	0.5 MG.
DIGITOXIN	0.1 MG.	0.5 MG.
DIGOXIN	0.5 MG.	0.5 MG.

SUPPLIED—Gitaligin TABLETS 0.5 mg., bottles of 30 and 100.

Gitaligin INJECTION 2.5 mg. per 5 cc. sterile I.V. solution, boxes of 3 and 12 ampuls.

Gitaligin DROPS with special calibrated dropper, bottles of 30 cc.

*BIBLIOGRAPHY AVAILABLE ON REQUEST.

WHITE LABORATORIES, INC., KENILWORTH, NEW JERSEY



ACIROL

ACHROMYCIN® V Tetracycline with Citric Acid **LEDERLE**

LEDERLE LABORATORIES, a division of AMERICAN CYANAMID COMPANY, Pearl River, New York



WICHTIG



*Psoriasis can destroy
the most beautiful
body in the world...*
LIPAN
capsules
*added to your
armamentarium will provide...*

maximum effect with minimum inconvenience to the patient. No messy ointments or lotions. When following your prescribed regimen an impressive percentage of patients will become free of the symptoms.

LIPANIZE THE PSORIATIC TO OBTAIN SYMPTOM-FREE PATIENTS

Complete LIPANIZATION of the patient is essential for successful clinical results. LIPANIZATION is accomplished with saturation doses of LIPAN and produces a gradual reduction of the hypercholesterolemia and hyperlipemia usually present in the psoriatic.

Dosage: Initial administration of LIPAN requires twelve (12) to fifteen (15) capsules daily in conjunction with food intake. After complete LIPANIZATION which requires about ten days, dosage is then adjusted to the quantity of food ingested.

Maintenance Dosage: After complete remission of lesions the dose is usually one (1) to two (2) capsules with each intake of food.

LIPAN Capsules or Tablets contain:

Specially prepared highly activated, desiccated and defatted whole Pancreas; Thiamin HCl, 1.5 mg. Vitamin D, 500 I.U.

Available: Bottles 180's, 500's

For Topical Application:

Epidol, a clear, adhesive, non-greasy, rapidly drying, improved Wright's Liquor Carbonic Detergents plus Salicylic Acid 3%. Easy to apply. Easy to remove.

Supplied in bottles with applicators 3 fl. oz.—6 fl. oz.

Samples and Literature upon request

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which women...

and when...

need

iron therapy?



Many clinicians agree that the normal woman of child-bearing age requires iron therapy for a month or six weeks of each year.

Formula: Each fluidounce contains:

Iron peptonized	420 mg. (Equiv. in elemental iron to 71 mg.)
Manganese citrate, soluble	158 mg.
Thiamine hydrochloride	10 mg.
Riboflavin	10 mg.
Vitamin B ₁₂ Activity (derived from Cobalamin conc.)	20 mcg.
Nicotinamide	50 mg.
Pyridoxine hydrochloride	1 mg.
Pantothenic acid	5 mg.
Liver fraction I	2 Gm.
Rice bran extract	1 Gm.
Inositol	30 mg.
Choline	60 mg.

Iron-deficiency anemia, usually identified as hypochromic microcytic anemia, is seen in most age groups, from the adolescent to the senior members.

For the treatment of these common anemias, Livitamin offers *peptonized* iron—virtually predigested, well absorbed, and less irritating than other forms. The Livitamin formula, which contains the B complex, provides integrated therapy to normalize the blood picture.

LIVITAMIN®

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*To ensure desired
therapeutic response*

— look to peptonized iron



CURRENT STUDIES* SHOW PEPTONIZED IRON

One-third as toxic as ferrous sulfate.

Absorbed as well as ferrous sulfate.

Non-astringent.

Free from tendencies to disturb digestion.
(One-tenth as irritating to the gastric
mucosa as ferrous sulfate.)

More rapid response in iron-deficient anemias.

*Keith, J.H.: Utilization and Toxicity of Peptonized Iron and Ferrous Sulfate, Am. J. Clin. Nutrition 1:35 (Jan.-Feb., 1957).

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Write for samples and literature.

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UNIQUE! NEW!



tablets • suppositories

chemically different • pharmacologically unique
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• prompt and predictable action

Tablets: work overnight without disturbing sleep;¹⁻³
taken before breakfast, act within six hours

Suppositories: produce evacuation in 15-60 minutes⁴⁻⁶

• acts directly on colonic mucosa^{7,8}

• virtually no contraindications¹⁻¹³

• very well tolerated^{1,3,5,9,11-13}

dosage: Tablets: One to 3 (usually 2) at bedtime for bowel movement the following morning, or 1/2 hour before breakfast for a movement within six hours.

Suppositories: One at time bowel movement is required.

supplied: DULCOLAX® (brand of bisacodyl). Yellow enteric-coated tablets of 5 mg. in boxes of 6 and bottles of 100. Suppositories of 10 mg. in boxes of 6. Under license from C. H. Boehringer Sohn, Ingelheim.

acts directly on colonic mucosa
does not depend on systemic absorption

references

- (1) Foertsch, A.: Deutsche med. Wochenschr. 78:916, 1953.
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in over 600 clinical studies

Specific
FOR RELIEF OF ANXIETY
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Selective

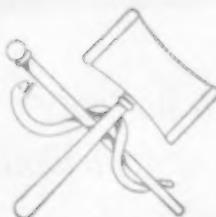
Does not interfere with autonomic function
Does not impair mental efficiency,
motor control, or normal behavior
Has not produced hypotension,
agranulocytosis or jaundice

Miltown®

Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets.

 WALLACE LABORATORIES, New Brunswick, N. J.

CH-8045



What's Your Verdict?

Edited by Ann Ledakowich, Member of the Bar of New Jersey

A pregnant woman engaged the services of a physician for prenatal, delivery, and postnatal care. When her labor commenced, her husband urged the physician to come to his wife's bedside. He refused, asserting that the child's birth was not due for another two weeks.

The woman's labor pains continued throughout the afternoon and evening. About 1:00 a.m. her brother sought the physician to examine his patient. At this time he yielded, but, upon examination, he advised his patient that her baby would not arrive for another two weeks.

Labor pains continued throughout the early hours of the morning, becoming more severe and more frequent. At 6:00 a.m. the woman feared her baby's birth was imminent and she sent her brother once again for the doctor. He refused to come.

At 7:30 a.m., when the patient's husband returned from work, he proceeded immediately to the physician's office, pleading with him to come at once. The physician refused, saying he would have nothing further to do with the case.

At this, the patient's husband tried to engage another physician but was unable to do so. His wife bore her child without the aid of any person having knowledge of deliveries. With the umbilical cord still uncut, she and her child were taken a distance of thirteen miles over rough country road to a hospital.

The woman now sues the physician for negligence and an unwarranted abandonment of her case. She seeks to recover damages for physical and mental pain and

suffering, including humiliation, shock and fright.

The physician's attorney defends that an action for abandonment is an action for the breach of a contract. As such, only the price of the contract, the fee paid for the physician's services, can be recovered. Pain and suffering are not compensable in an action for breach of contract.

The trial court entered a judgment for the patient, from which the physician appealed. On appeal, how would you decide?

(Answer on page 198a)



*which patients
with noncalculous
gallbladder
disease
should undergo
surgery?*

Essentially those who are not relieved by a prolonged trial period of medical management.
Source—Lichtenstein, M. E.: GP 16:114 (Oct.) 1957.

*for medical, preoperative,
postoperative management
of biliary disorders*

"therapeutic bile"

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DECHOLIN SODIUM®**
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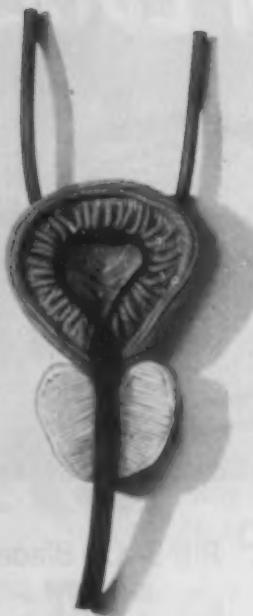
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CLINICAL BRIEFS
FOR MODERN PRACTICE

CHRONIC PROSTATITIS

"probably
the most common
chronic infection
in men over
50 years of age."¹



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"From clinical observation we have found that more cases of chronic prostatitis respond to FURADANTIN than to any other anti-infection agent."²

In chronic prostatitis, "antibacterial therapy may begin on the first visit with FURADANTIN 100 mg. 4 times daily . . ."³

Available as Tablets, Oral Suspension

References: 1. Alyea, E. P.: Infections and Inflammations of the Male Genital Tract. In Campbell, M.J.: Urology, Philadelphia, W. B. Saunders Co., 1964, vol. 1, p. 643. 2. Barnes, R. W., in discussion of Chin, J., and Bischoff, A. J.: Tr. West. Sect. Am. Urol. Ass. 22:196, 1965. 3. Goodwin, W. E., and Turner, R. D.: Prostatitis, In Conn, F.: Current Therapy 1958, Philadelphia, W. B. Saunders Co., 1958, p. 299.

NITROFURANS—a new class of antimicrobials—neither antibiotics nor sulfonamides



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It's Sharp

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PREVENT both cause and fear of ANGINA ATTACKS

proven
safety
for
long-term
use



Miltrate*

NEW DOVETAILED THERAPY COMBINES IN ONE TABLET

prolonged relief from
anxiety and tension with

MILTOWN® + **PETN**

The original meprobamate,
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sustained coronary
vasodilation with

PETN

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"In diagnosis and treatment [of cardiovascular diseases] . . . the physician must deal with both the emotional and physical components of the problem simultaneously."¹

The addition of Miltown to PETN, as in Miltrate, "...appears to be more effective than [PETN] alone in the control of coronary insufficiency and angina pectoris."²

Miltrate is recommended for prevention of angina attacks, not for relief of acute attacks.

Supplied: Bottles of 50 tablets.

Each tablet contains: 200 mg. Miltown + 10 mg. pentaerythritol tetranitrate.

Usual dosage: 1 or 2 tablets q.i.d. before meals and at bedtime.

Dosage should be individualized.

For clinical supply and literature, write Dept. 7F

¹ Friedlander, H. S.: The role of ataraxia in cardiology. *Am. J. Card.* 1:285, March 1958.

² Shapiro, S.: Observations on the use of meprobamate in cardiovascular disorders. *Angiology* 8:581, Dec. 1957.

EN-1246



WALLACE LABORATORIES, New Brunswick, N. J.

*TRADE NAME

for depression

“Deprol”[†]

Clinically confirmed
in over 2,500
documented
case histories^{1,2}

CONFIRMED EFFICACY

Deprol

- acts promptly to control depression
without stimulation
- restores natural sleep and reduces
depressive rumination and crying

DOCUMENTED SAFETY

Deprol is unlike amine-oxidase inhibitors

- does not adversely affect blood pressure
or sexual function
- no excessive elation; no liver toxicity

Deprol is unlike central nervous stimulants

- does not cause insomnia or depress appetite
- no amphetamine-like jitteriness;
no depression-producing aftereffects

Usage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: Each tablet contains 400 mg. meprobamate and 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl).

Supplied: Bottles of 50 scored tablets.

†TRADE NAME CO-500

1. Alexander, L.: Chemotherapy of depression—Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. *J.A.M.A.* 166:1019, March 1, 1958.

2. Current personal communications; in the files of Wallace Laboratories.

Literature and samples on request

 **WALLACE LABORATORIES, New Brunswick, N. J.**



AFTER HOURS

Photographs with brief description of your hobby will be welcomed. A beautiful imported German apothecary jar will be sent to each contributor.

Eighteen months ago I found a hobby perfect for an M.D. whose practice has a big percentage of obstetrical work, and one that can stand the strain of day-in, day-out living with seven other persons ranging from age three to that of my wife.

"Boat fever" abated when I realized there was no radar system between the hospital delivery room and my small cabin cruiser. But the Hammond organ was a challenge. Since scheduled lessons were out of the question, I bought several do-it-yourself books and started out to learn something of the world of

music after my six-year-old daughter, Janie, told me where middle C is.

Because the organ can be played very softly, I can play any time of day or night without waking anyone. In fact, organ music seems to have a calming effect, and, in addition, has stimulated a love of music for all eight of us.

Organ playing is rewarding for the player and for the listener, too!

George W. Hicks, M.D.
Pascagoula, Mississippi



Dr. Hicks (left) at the console of the organ. His six children (above) tend to be an understanding, receptive audience.

IN STRESS CONDITIONS SUCH AS:



Spontaneous abortion
Inflammatory diseases
Infectious diseases
Cardiovascular diseases
Metabolic diseases

CAPILLARY AND VASCULAR DAMAGE ARE COMMON FINDINGS

In these stress conditions whether caused by
nutritional deficiencies, environment, drugs,
chemicals, toxins, virus or infections

**HESPERIDIN, HESPERIDIN METHYL CHALCONE
or LEMON BIOFLAVONOID COMPLEX**

are indicated as therapeutic adjuncts for
the control and management of the associated
capillary and vascular damage.

Sunkist and Exchange Brand Hesperidin and Lemon Bioflavonoid Complex are available to the medical profession in specialty formulations developed by leading pharmaceutical manufacturers.

Sunkist Growers

PRODUCTS DEPARTMENT
PHARMACEUTICAL DIVISION
ONTARIO, CALIFORNIA



All are in the picture . . .

baby, mother, and physician

S-M-A provides adequate nutrition for normal health and growth.

S-M-A Service* . . . A specialized program designed to complement the instructions of the physician from the first visits of the expectant mother through the months of infant feeding. The Service includes the beautifully illustrated and informative "Your Baby Book"; a personalized Mother's Gift from you; "Instructions for Care of Mother and Baby."

Additional features of the S-M-A Service include a physician's handbook, "Modern Infant Feeding," for your personal use.

S-M-A ® FOOD FORMULA FOR INFANTS
Concentrated Liquid
Instant Powder

FOR SOUND INFANT NUTRITION

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Philadelphia, Pa.

*Available without charge from your Wyeth Territory Manager for all obstetrical patients in your practice.



This advertisement
complies with the Code
for Advertising of the
Physicians' Council
for Information on
Child Health.

WHY RISK DELAYED RECOVERY
FROM
**URINARY TRACT
INFECTIONS?**

Urinary tract infections, due to staphylococci or proteus (resistant or otherwise), may not respond to any antimicrobial agent except CATHOMYCIN (novobiocin). CATHOMYCIN has a long, established record* of effectiveness against organisms resistant to most other antibiotics. It may be administered in combination with sulfonamides or with other antibiotics, providing a broad spectrum of action and protection against the emergence of resistant strains.

Especially useful for those hard-to-treat urinary tract infections, even those complicated by resistant staphylococci or resistant proteus, CATHOMYCIN is rapidly absorbed—producing therapeutic blood levels with a duration of 12 hours or more. It is generally well tolerated and there is no evidence of cross-resistance with other antibiotics.

CATHOMYCIN®

for staphylococcal septicemia, enteritis, postoperative wound infections and other serious staph infections.

NOVOBIOCIN

DOSAGE: Adults: CATHOMYCIN Sodium 2 capsules b.i.d. or CATHOMYCIN Calcium Syrup 4 teaspoonsfuls b.i.d. Children: (Up to 12 years) 2 to 8 teaspoonsfuls daily in divided doses based on 10 mg. CATHOMYCIN per lb. of body weight per day.

SUPPLIED: Capsules sodium novobiocin, each containing the equivalent of 250 mg. of novobiocin—vials of 16 and 100—and as an orange-flavored syrup (aqueous suspension), in bottles of 60 cc. and 473 cc. (1 pint). Each 5 cc. CATHOMYCIN Syrup contains 125 mg. (2.5%) novobiocin, as calcium novobiocin.

*Complete bibliography available on request.

For Parenteral Therapy LYOVAC® CATHOMYCIN



MERCK SHARP & DOHME Division of MERCK & CO., INC., Philadelphia 1, Pa.



If you were to examine these patients



could you
detect
the asthmatic on
Medrol?

Probably not. Not without a history.

First, because he's more than likely symptom-free.

Second, because he shows none of the disturbing changes in appearance, behavior or metabolism sometimes associated with corticotherapy.

Even your practiced clinical eye would find it difficult to spot someone else's Medrol patient.

But in your own patients, you could see the advantages of Medrol right away. Why not try it?



Medrol hits
the disease,
but spares the
patient

Upjohn

The Upjohn Company, Kalamazoo, Michigan

*TRADEMARK, REG. U. S. PAT. OFF.—METHYLPREDNISOLONE, UPJOHN

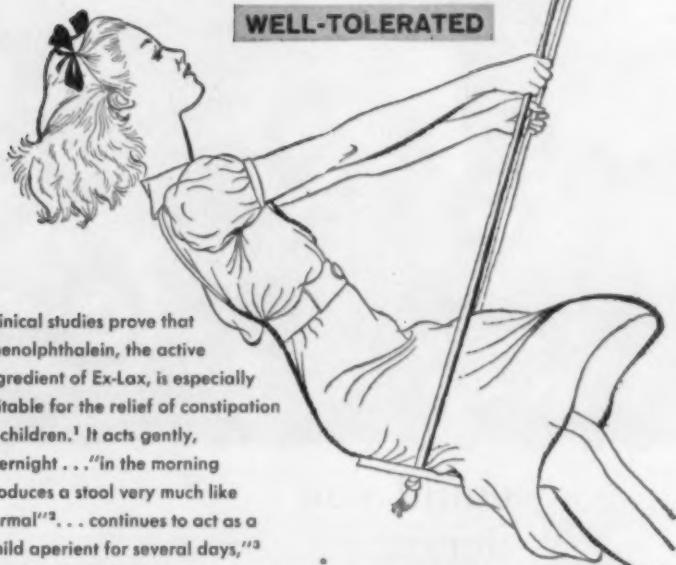
to help children
toward their normal
regularity

EX-LAX

PALATABLE

EFFECTIVE

WELL-TOLERATED



Clinical studies prove that phenolphthalein, the active ingredient of Ex-Lax, is especially suitable for the relief of constipation in children.¹ It acts gently, overnight . . . "in the morning produces a stool very much like normal"² . . . continues to act as a "mild aperient for several days,"³ lessening need for frequent medication. No "adverse effects, such as tissue irritation, toxic symptoms or interference with the normal physiological functions"⁴ were observed by isotope research.

- 1. S. Diklowky, F. Steigmann: Phenolphthalein in Childhood. *Jour. Ped.*, Aug. 1954; 45:169.
- 2. H. Beckman: Treatment in General Practice. W. B. Saunders Co., 1946; p. 478.
- 3. A. Grossman: *Pharmacology and Therapeutics*. Lea & Febiger, 1954; p. 391.
- 4. W. J. Vitak, W. C. Liu, L. J. Roth: Studies on the Fate of Carbon-14 Labeled Phenolphthalein. *Jour. Pharmacol. and Exp. Therapeutics*, July 1956, 117:347.
-
-
-
-



Coroner's Corner

A beautiful imported German apothecary jar will be sent to each contributor of an unusual case report.

A 47-year-old waitress dined on shrimp at her place of work at about 2:30 p.m. About one hour later she became ill with symptoms only vaguely described as pain in the chest. Because of the illness she went home, and later in the afternoon she became nauseated and vomited. She consulted her physician by telephone, and complained to him principally of a feeling of fullness in the neck. At 6:00 p.m. she was brought to the hospital by ambulance because of continued vomiting and generalized muscle aches. Her blood pressure was 98/60, her pulse weak and irregular, and her color slightly cyanotic. In spite of supportive measures her condition became gradually worse and at about 10:00 p.m. she died with acute pulmonary edema.

Clinical diagnoses entertained were acute overwhelming septicemia or acute food poisoning. Because of the latter possibility the Coroner ordered that an autopsy be performed.

The post-mortem examination showed a pheochromocytoma of the left adrenal gland weighing 250 grams. In addition there was marked pulmonary edema, cerebral edema, and dilatation of the heart. Chemical analysis of the tumor indicated that its total content

of adrenaline-like substance, predominantly norepinephrine, was about 500 milligrams.

In retrospect, all of the patient's symptoms were consistent with the effects of acute hypersecretion of adrenal medullary hormone. That this uncommon tumor may occasionally be a cause of sudden death is not widely known. The medicolegal autopsy not only clarified the cause of death, and dispelled the suspicion of food poisoning, but also brought to light an interesting and unusual medical condition.

Pathologist
New Britain, Conn.



both have a cold...
BUT ONLY ONE IS COMFORTABLE



Duadacin™

brings comfort to her cold

**Stopped-up
nose**

PROMPT DECONGESTANT ACTION

Rapidly relieves nasal congestion, while

giving the patient a welcome "lift"...

with Phenylephrine.

**Allergic
manifesta-
tions**

**COMBATS HISTAMINE-INDUCED
SYMPTOMS**

Balanced ratio of chemically distinct

antihistamines results in full potency with

marked freedom from side-actions...

with Chlorpheniramine and Pyrilamine.

**Headache,
Fever,
Sore Throat**

**ANALGESIC ACTION FOR ADDED
COMFORT**

Potentiated effect of Salicylamide with
acetophenetidin helps relieve depressing
"aches and pains." Caffeine and ascor-
bic acid also provided.

Dose: One capsule three or four times daily.

Supplied: Green and white capsules, bottles of 100

LLOYD BROTHERS, INC., CINCINNATI 3, OHIO

"Premarin" Vaginal Cream

promotes proliferation and
vascularity of the vaginal mucosa in
postmenopausal patients, and used

pre- and postoperatively

tends to restore the integrity
of atrophied, friable tissues, and
change the vaginal environment to one
that resists infection, which

facilitates surgery—favors healing



Applied for 7 to 10 days before, and for 10 days after plastic vaginal surgery in the postmenopausal patient, "Premarin" Vaginal Cream effectively revitalizes the vaginal epithelium making the intervention less difficult and accelerating healing. It is also widely prescribed for the prompt relief of senile vaginitis and pruritus vulvae, as well as juvenile vaginitis. Also available with hydrocortisone as "Premarin" H-C Vaginal Cream for use when immediate anti-inflammatory, antipruritic action is indicated, particularly in the initial stages of estrogen therapy of various vulvovaginal disorders. "Premarin"® conjugated estrogens (equine) AYERST LABORATORIES, New York 16, N.Y.; Montreal, Canada

whenever
he
starts
to

FRUIT FLAVORED CHOCOLATE NUGGETS



he's
ready
for

Delectavites®

*New vitamin-mineral supplement
in delicious chocolate-like nuggets*



There's nothing easier to give
or take—
than Delectavites.
A real treat...
the children's favorite...
tops with adults, too.

Each nugget contains:	
Vitamin A.	5,000 Units*
Vitamin D.	1,000 Units*
Vitamin C.	75 mg.
Vitamin E.	10 mg.
Vitamin B-1.	2.5 mg.
Vitamin B-3.	0.5 mg.
Vitamin B-4.	1 mg.
Vitamin B-12 Activity.	3 mcg.
Pantothenic Acid.	5 mg.
Nicotinamide.	20 mg.
Folic Acid.	0.1 mg.
Biotin.	0.01 mg.
Riboflavin.	12 mg.
Calcium Carbonate.	125 mg.
Boron.	0.1 mg.
Chromium.	0.01 mg.
Fluorine.	0.1 mg.
Iodine.	0.2 mg.
Magnesium.	3.0 mg.
Manganese.	0.1 mg.
Molybdenum.	1.0 mg.
Potassium.	2.5 mg.
“* s.a.”	5,000 Units

Take One Nugget per day
(Supplies: Boxes of 30—one
month's supply
Boxes of 10—one
month's supply or
longer, perhaps.)

White

WHITE LABORATORIES, INC., KENILWORTH, N. J.

**This patient's blood-pressure controlled
for the first time without side effects**

Remember this particular patient. He typifies the thousands of patients involved in a clinical investigation which promises to bring about a major change in rauwolfia therapy. The patient is being treated in a Massachusetts hospital. His blood pressure without treatment ranged up to 220/138; now *for the first time*, it is being maintained near normal *without side effects*. This dramatic case history is part of the story of a remarkable new antihypertensive agent

SingoserpTM
(syrosingopine CIBA)

coming as soon as sufficient supplies are available . . .
from CIBA, *world leader in hypertension research.*

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two years of
clinical investigation
show

VANUL

new
mucosa-coating
vegetable mucilage
for the
treatment of
Gastric and
Duodenal Ulcers

82% effective (233 cases out of 287)* in protecting the gastrointestinal mucosa from the digestive action of acid gastric juices, providing: ■ *Prompt symptomatic relief of pain and distress...usually within 48 hours* ■ *Stimulation to tissue regeneration and healing of the ulcer crater.* Patients were able to return to regular diet immediately after symptomatic relief was achieved, abstaining only from carbonated beverages; no other medication was necessary.

*Based on 287 cases, results confirmed by X-ray, under the supervision of M. M. Szucs, M.D., Youngstown, Ohio (to be published).

VANUL contains Vegetable Mucilage and Tincture of Belladonna in a peppermint-licorice flavored aqueous suspension.

DOSAGE: 1 tablespoonful before meals and at bedtime.

SUPPLIED: 16 oz. bottles.

Literature and samples on request.



VANGUARD PHARMACEUTICAL CORP.

410 Pompton Avenue, Cedar Grove, N. J.

Medical Teasers

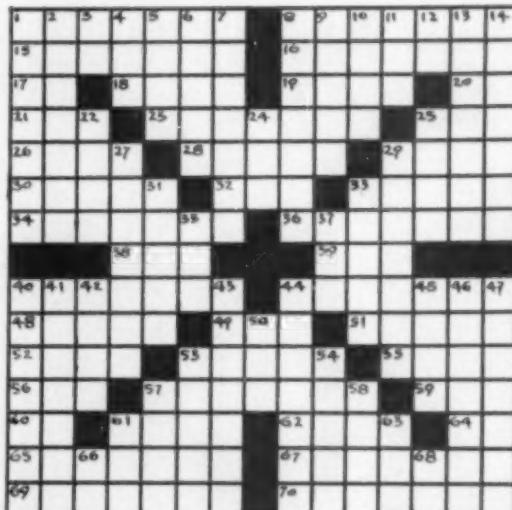
A Challenging Crossword Puzzle for the Physician
(Solution on page 164a)

HORIZONTAL

- Aseptic
- Local anesthetic
- Nonorganic substance
- Separation of material by washing (chem.)
- Ear (prefix)
- Olfactory organ
- Seven (Lat., abbr.)
- Surface Tension (abbr.)
- ...man, Harry
- Unavoidable penalty
- Indonesian tribe
- Suspend
- Toxin
- Makes a mistake
- Vessel to heat liquids (pl.)
- New (prefix)
- Feeling of boredom
- Matter-of-fact person
- Narcotic stupor
- Big (abbr.)
- Internal Revenue Office (abbr.)
- Mercurous chloride
- Vitamin B₆
- Sphere of action
- Devour
- Woman radio commentator
- Meadows
- Herass
- Rescue
- Electrified particle
- Reserve
- Moderato (abbr.)
- Bachelor of Laws (abbr.)
- Strip of wood
- Membrane behind the cornea
- Ullium (symbol)
- Otalgia
- Solution of volatile oil in alcohol
- Extends
- Revolved

VERTICAL

- Suffocate
- Subject to volumetric chemical analysis
- Half an em
- Kidney (Lat.)



by Alan A. Brown

- Metallic element
- Asafetida
- Simple chemical substance
- Surrender
- An ester of glyceryl
- Small vessel (pl.)
- Siamese coin
- Two (Roman)
- Quack remedy
- Constrictive spasm
-Papenheim stain
- Pertaining to (suffix)
- Famous cartoonist
- Four quarts (pl.)
- Repeat performances
- Greek letter
- Went astray
- Perceive
- Help
- Diameter of a tube
- Minute spaces in tissues
- Deficient in fat
- Aquatic annelids used for drawing blood
- Studio
- Madam (colloq.)
- Record of shipment
- Shaped like a needle
- Request
- To lave
- The trunk
- Famous composer
- The main point
- Milk
- Body of water
- Radium (symbol)
- Nitron (symbol)

A STERILE

Admission at 2 P.M.



for intestinal antisepsis...

NEOT

NEOTHALIDINE provides fast, effective bowel sterilization. It affords broad antibacterial activity in a concentrated, non-absorbed dosage form. By reducing gas-producing organisms, NEOTHALIDINE provides a non-inflated, easy-to-handle bowel. It is effective in the presence of food and other organic substances, and aids in the mechanical cleansing of the bowel.

Monilial complications are not likely to occur when fast-acting NEOTHALIDINE is prescribed in the recommended dosage.

NEOMYCIN is widely used as an intestinal antiseptic because it is rapidly effective against most intestinal pathogens.

SULFATHALIDINE® (phthalylsulfathiazole) is the ideal adjunct to neomycin because of its effectiveness against *Aerobacter aerogenes*, *Shigella*, and *Clostridia* — organisms that are not responsive to neomycin therapy alone.

Together, as NEOTHALIDINE — a formula that closely approaches the ideal intestinal antiseptic.¹

Supplied: as NEOTHALIDINE Granules in a 120-cc. dispensing bottle, to be reconstituted with water at the time of dispensing. Each bottle contains 12.0 Gm. of Sulfathalidine® (phthalylsulfathiazole) and 8.0 Gm. of neomycin sulfate (equivalent to 5.6 Gm. neomycin base).

1. Poth, E. J.: Intestinal Antiseptics in Surgery, *J.A.M.A.* 180:1516, Dec. 26, 1963.

BOWEL IN 18 HOURS

Incision at 8 A.M.



HALIDINE®

NEOMYCIN AND SULFATHALIDINE®

NEOMYCIN AND
SULFATHALIDINE®

IT TAKES



TO DO THE JOB

NEOTHALIDINE and SULFATHALIDINE (sulphathiazole) are trademarks of Merck & Co., Inc.



MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

NEW
TOPICAL
DIMENSIONS

in

INCORPORATED
IN EXCLUSIVE
ACID MANTLE
VEHICLE

pH 5.0

COR-TAR-QUIN™

ACID MANTLE® • hydrocortisone • stainless tar • diiodohydroxyquinoline

Antiinflammatory
Antipruritic
Antiallergic
Bactericidal
Fungicidal
Protozoacidal

} action

Creme

also available
COR-TAR-QUIN
LOTION

In subacute and chronic dermatoses, "especially where an inflammatory reaction was accompanied by increased scaling and lichenification with secondary infection such as is seen in seborrheic dermatitis, atopic dermatitis, contact dermatitis, and neurodermatitis."

—Rein, C. R., and Fleischmajer, R.: Personal Communication.

pH 5.0
Cor-tar-quin™
CREME
1%
DOME

Sig: Apply b. i. d.
½ oz., 1 oz., 2 oz., & 4 oz. tubes
either 0.5% or 1.0% hydrocortisone.

Samples and literature on request



DOME Chemicals Inc.

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665 N. Robertson Blvd., Los Angeles, Calif.
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ACHROCIDIN*

TETRACYCLINE-ANTIHISTAMINE-ANALGESIC COMPOUND LEDERLE

A versatile, well-balanced formula for treating common upper respiratory infections, particularly during respiratory epidemics; when bacterial complications are observed or are likely; when patient's history is positive for recurrent otitis, pulmonary, nephritic, or rheumatic involvement.

CHECKS SYMPTOMS: Includes traditional components for rapid relief of the traditional nonspecific nasopharyngitis, symptoms of malaise, chilly sensations, inconstant low-grade fever, headache, muscular pain, pharyngeal and nasal discharge.

Available on prescription only.

Adult dosage for ACHROCIDIN Tablets and new caffeine-free ACHROCIDIN Syrup is two tablets or teaspoonfuls of syrup three or four times daily. Dosage for children according to weight and age.

TABLETS (sugar coated)

Each Tablet contains:

ACHROMYCIN® Tetracycline	125 mg.
Phenacetin	120 mg.
Caffeine	30 mg.
Salicylamide	150 mg.
Chlorothiazine Citrate	25 mg.

Bottles of 24 and 100.

SYRUP (lemon-lime flavored)

Each teaspoonful (5 cc.) contains:

ACHROMYCIN® Tetracycline equivalent to tetracycline HCl	125 mg.
Phenacetin	120 mg.
Salicylamide	150 mg.
Ascorbic Acid (C)	25 mg.
Pyrilamine Maleate	15 mg.
Methylparaben	4 mg.
Propylparaben	1 mg.

Bottle of 4 oz.

- adenitis
- sinusitis
- otitis
- bronchitis
- pneumonitis

prevents the . . . multifarious sequelae



LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

*Reg. U. S. Pat. Off.



she
needs
support
too...

during her pregnancy
and throughout lactation



NATABEC[®]

KAPSEALS[®]



vitamin-mineral combination

She supplements her daily diet with the NATABEC Kapsals prescribed by her physician. The carefully balanced formula of NATABEC provides vitamin-mineral support, helping to promote better health for both mother and child.

each NATABEC Kapsal contains:

Calcium carbonate.....	500 mg.
Ferrous sulfate.....	150 mg.
Vitamin D.....	400 units (10 mcg.)
Vitamin B ₁ (thiamine) mononitrate.....	3 mg.
Vitamin B ₂ (riboflavin).....	3 mg.
Vitamin B ₆ (crystalline).....	2 mcg.
Folic acid.....	1 mg.
Synkamin [®] (vitamin K) (as the hydrochloride).....	0.5 mg.
Rutin.....	10 mg.
Nicotinamide.....	10 mg.
Vitamin B ₁₂ (pyridoxine hydrochloride).....	3 mg.
Vitamin C (ascorbic acid).....	50 mg.
Vitamin A.....	4,000 units (1.2 mg.)
Intrinsic factor concentrate.....	5 mg.

dosage: As a dietary supplement during pregnancy and throughout lactation, one or more Kapsals daily. Available in bottles of 100 and 1,000.



PARKE, DAVIS & COMPANY
DETROIT 32, MICHIGAN



Who Is This Doctor?

The author of "Epistle on Toleration," "Treatise on Education," and "Constitution of Carolina," he was the great philosophical apostle of freedom of the 17th century. "All men are naturally in a state of freedom, also of equality," he wrote.

He was born in England in 1632 and received his education at Oxford, soon becoming a Lecturer in Greek and Rhetoric. Imbued with the learning of Bacon and Descartes, inspired by the great physicist, Robert Boyle, whom he knew intimately, he became interested in experimental physics.

He received a bachelorship of medicine in 1674 and was appointed to a medical studentship. He was installed in the London residence of Lord Ashley as physician and confidential secretary and lived there for nine years. He was an intimate of Sydenham, Mapleton and other physicians of the day. He is credited by Boyle with inducing the latter to take an interest in medicine, which resulted in the physicist's writing "Experimental Philosophy," the second part of which is a review of medicine and suggestions for its improvement, and "Memoirs for the Natural History of the Human Blood," which is dedicated to him by the author.

His "Treatise on Education" opposed learning by rote and the learning of a language by its grammar first. His great "Essay Concerning Human Understanding" is an estimate of how far human understanding can reach, and has gone into 40 editions or more. "On Civil Government" is still another famous writing.

He became interested in the Carolina colony in America and, as secretary to the Lords Proprietors and appointed one of the Land-graves, he wrote the "Fundamental Constitutions of the Government of Carolina," which contained his famous statement, "No person whatsoever shall disturb, molest or prosecute another for his speculative opinions in religion or his way of worship."

He lived in France in 1675 for 3 years as a result of the political eclipse of Lord Ashley and went into exile in Holland from 1683-89 for political difficulties with the Crown. After this he returned to England, where he died in 1704.

Can you name this doctor? *Answer on page 198a.*



"Intranasal and sinus infections have been found to disappear more promptly . . . helps to combat the associated nasopharyngitis . . ."

nasal infections disappear

Furacin® Nasal

BRAND OF NITROFURAZONE

WITH PHENYLEPHRINE

NOW IN CONVENIENT PLASTIC ATOMIZER

IN SINUSITIS, RHINITIS AND NASOPHARYNGITIS, FURACIN exerts bactericidal action against the majority of gram-positive and gram-negative organisms *without tissue toxicity*. It prevents malodor and crusting and does not interfere with phagocytosis. With FURACIN, there is no slowing of the ciliary beat, no stinging and no irritation. The vasoconstrictor affords rapid symptomatic relief. Prescribe plastic atomizer of 15 cc.

FORMULA: FURACIN 0.02% with phenylephrine • HCl 0.25% in aqueous isotonic solution.

For infections of the eye and ear:

FURACIN OPHTHALMIC
Liquid • Ointment

FURACIN EAR
Solution



FURACIN—the topical antibacterial most widely useful to the physician—in formulations especially effective in EEN infections

*Spencer, J. T., in Conn, H. F.: Current Therapy 1954, Philadelphia. W. B. Saunders Co., 1954, p. 130.

EATON LABORATORIES

NORWICH, NEW YORK

taken throughout the "autumn" of life...

ELDEC® Kapseals®

comprehensive physiologic supplement

help improve vitality during the "winter" years

vitamins and minerals to maintain cellular function...

enzymes to aid digestion...

protein improvement factors

to help maintain nitrogen balance...

steroids to stimulate metabolism



each Kapseal contains:

VITAMINS

Vitamin A	1,667 Units (0.5 mg.)
Vitamin B ₁ mononitrate	0.67 mg.
Ascorbic acid	33.3 mg.
Nicotinamide	16.7 mg.
Vitamin B ₂	0.67 mg.
Vitamin B ₆	0.5 mg.
Vitamin B ₁₂ with intrinsic factor concentrate	0.033 USP Unit (oral)
Folic acid	0.1 mg.
Choline bitartrate	6.67 mg.
Pantethenic acid (as the sodium salt)	5 mg.

MINERALS

Ferrous sulfate (excised)	16.7 mg.
Iodine (as potassium iodide)	0.05 mg.
Calcium carbonate	66.7 mg.

DIGESTIVE ENZYMES

Taka-Diastase®	20 mg.
Pancreatin	133.3 mg.

PROTEIN IMPROVEMENT FACTORS

L-Lysine monohydrochloride	66.7 mg.
di-Methionine	16.7 mg.

GONADAL HORMONES

Methyl testosterone	1.67 mg.
Theelin	0.167 mg.

DOSAGE:

One Kapseal three times daily before meals. Female patients should follow each 21-day course with a 7-day rest interval.

PACKAGING:

ELDEC Kapseals are available in bottles of 100.



PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN



Many such
hypertensives have
been on *Rauwiloid*
for 3 years
and more*

for Rauwiloid IS better tolerated
... "alseroxylon [Rauwiloid] is an
antihypertensive agent of equal
therapeutic efficacy to reserpine
in the treatment of hypertension
but with significantly less toxic-
ity."

*Fond, R.V., and Moyer, J.
H.: Rauwolfia Toxicity in
the Treatment of Hyper-
tension. Postgrad. Med.
23:41 (Jan.) 1958.

Rauwiloid®

ALSEROXYLON 1 MG.

virtually free from side actions

Enhances safety when more potent drugs are needed.

Rauwiloid® + Veriloid®
alseroxylon 1 mg. and alkavervir 3 mg.
for moderate to severe hypertension.
Initial dose, 1 tablet t.i.d., p.c.

Rauwiloid® + Hexamethonium
alseroxylon 1 mg. and hexamethonium chlor-
ide dihydrate 250 mg.
in severe, otherwise intractable hyper-
tension. Initial dose, $\frac{1}{2}$ tablet, q.i.d.
Both combinations in convenient
single-tablet form.

just two tablets
at bedtime
After full effect
one tablet suffices

Riker
NORTHridge,
CALIFORNIA

In urinary-tract infections

HIGH TISSUE LEVELS

HIGH BLOOD LEVELS

LOW TOXICITY

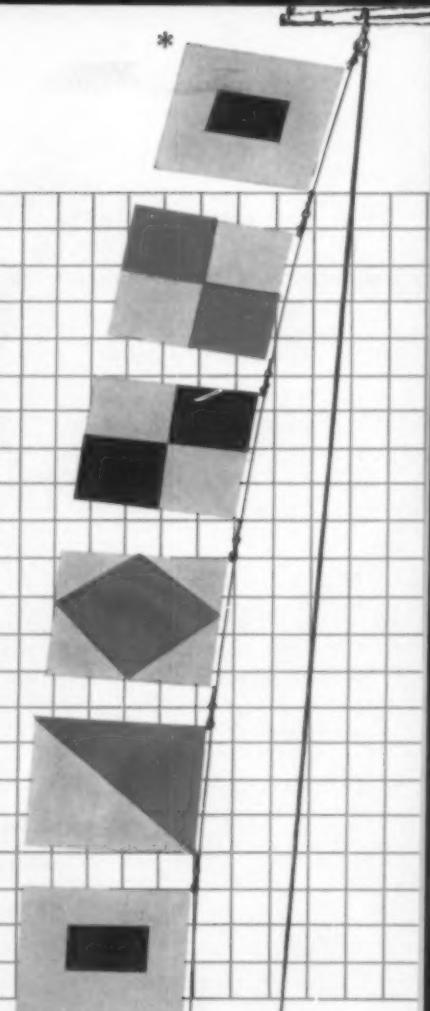
*International Code flags spelling SULFOSE.

SUSPENSION TABLETS
SULFOSE®

Triple Sulfonamides, Wyeth
(Trisulfapyrimidines: Sulfadiazine,
Sulfamerazine, Sulfamethazine)



This advertisement
conforms to the Code
of Advertising of the
Physicians' Council
for Information on
Child Health.



LETTERS to the Editor

Doctor at Spandau

Dr. Pollard's article about the prisoners at Spandau (MT, October) was very unusual. My only regret is that he did not sketch in greater detail the men themselves.

J.K., M.D.
Chicago, Ill.

Very interesting article by Dr. Pollard about the Nazis kept behind bars at Spandau. The four-power medical meetings he describes sound like some-

thing out of a musical comedy. The pomp and circumstance with which one nation handed over authority to another was fitting in this odd medical situation.

F.M., M.D.
Los Angeles, Cal.

Hospital Series

I'm a regular reader of MEDICAL TIMES—have been for years. The series of articles on teaching hospitals throughout the nation are, I feel, a real service to medicine.

In connection with this—will you be running an article on Peter Bent Brigham Hospital in Boston?

A. W., M.D.
New York, N. Y.

Yes, it's on our list. Should be in print within a few months' time.

—Ed.

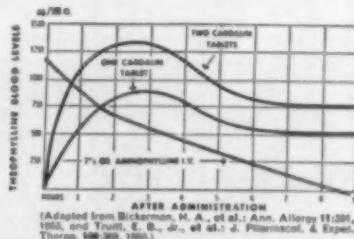
A NEISLER RESEARCH PRODUCT

higher and
more sustained
theophylline
blood levels...
orally

CARDALIN

proven effective clinically whenever high blood levels of theophylline are desired. Cardalim contains two protective factors* to guard against the nausea, gastric irritation and vomiting which occasionally accompany a high oral dose of aminophylline.

*U. S. Patent No. 3,087,400



(Adapted from Blaumenn, H. A., et al.; Ann. Allergy 11:301, 1953, and Truett, E. B., et al.; J. Pharmacol. & Exper. Therap. 198:389, 1950.)

Each tablet contains:

Aminophylline 5.0 gr.
Aluminum hydroxide 2.5 gr.
Ethyl aminobenzoate 0.5 gr.
Also available as Cardalim-Phen with ½ gr. phenobarbital.

To serve your patients today—call your pharmacist for any additional information you may need to prescribe Cardalim. And for prescription economy, prescribe Cardalim in 50's.

Irwin, Neisler & Co. • Decatur, Illinois

Neisler

MEDICAL TIMES

THE ORINASE® EPOCH

BREAKTHROUGH IN DIABETES

Upjohn

STANDARD REG. U. S. PAT. OFF. — TOLBUTAMIDE. UPJOHN



Location of the clinical
and research centers
throughout the
United States
where thousands of
investigators helped
to make possible
the advent of

THE ORINASE EPOCH

ORINASE

BREAKTHROUGH IN DIABETES

Just last year, a new chapter began in the treatment of diabetes: Orinase became available for general clinical practice. Today, more than 300,000 diabetics are enjoying the advantages of oral management. This extensive experience, reinforcing the findings of hundreds of investigators in research centers all over the United States, has confirmed that Orinase is both safe and effective in the majority of adult, stable diabetics. And we now know that the significance of Orinase goes even further.

Before Orinase, research in diabetes was moving ahead slowly. Pathogenesis of the disease remained an enigma, and the mechanism of insulin action continued to elude investigators. Nor was any explanation forthcoming for the different types of diabetes mellitus, the progressive nature of the disease, or for the wide range of insulin requirements.

Clinically, too, there was much to be desired: the lifelong regimen of daily injections, the rigid meal schedules, and, above all, the constant threat of hypoglycemia. To the patient, these meant a life centered around his disease; to the physician, the ever-present danger of complications.

And now, one year after the introduction of Orinase, what has experience taught us? What has Orinase meant to practicing physicians, to patients, to investigators? What can we expect of the future? In briefest summary, this is where the evidence points:

1

Diabetes mellitus does not appear to be a single pathological entity. There are several types of diabetes mellitus. The most common is "Orinase-positive" diabetes, in which administration of Orinase induces release and utilization of the patient's endogenous insulin.

2

In "Orinase-positive" diabetics, Orinase achieves better control than injections of exogenous insulin.

Facts and Figures

ORINASE

ONE YEAR AGO-1957

Orinase was officially released for prescription on June 3, 1957. Prior to its release, it had been thoroughly and painstakingly tested in more than 20,000 patients.

NUMBER OF PATIENTS ON ORINASE:

20,000

CRITERIA OF PATIENT SELECTION:

Adult, stable diabetes
(onset around 40 years of age)

INCIDENCE OF SIDE EFFECTS:
(transitory skin rash, nausea, etc.)

Only 3%

TOXICITY:

None

**ESSENTIAL CONDITION
FOR RESPONSE TO ORINASE:**

Functional pancreas

PRIMARY MODE OF ACTION OF ORINASE:

Unknown

CONTRAINDICATIONS:

Juvenile diabetes...brittle diabetes...
history of coma, acidosis, or ketosis...
fever...severe trauma...gangrene...
diabetes adequately controlled by diet
alone.

ONE YEAR LATER-1958

Today, Orinase is a routine therapeutic agent in the management of hundreds of thousands of diabetics. Numerous clinical observations confirm its efficacy and have brought to light many new additional benefits of Orinase therapy.

Over 300,000

Age: 40+ (at onset)

Insulin: 40- (daily requirements)

These are typical criteria for the candidate most likely to respond to Orinase. However, diabetics with an earlier development of the disease also deserve a careful trial with Orinase, because Orinase has been found effective in many of the 20 to 40 age-of-onset diabetics.

Approximately 3% (side effects continue to be mild and transitory—drug withdrawn for these effects in only 1.6%)

None

Functional beta cells of the pancreas

In the presence of a functional pancreas, Orinase effects the production and utilization of *native* insulin via *normal* channels.

Juvenile diabetes...brittle diabetes...history of coma, acidosis, or ketosis...fever...severe trauma...gangrene...diabetes adequately controlled by dietary restriction alone.

Objective advantages of Orinase

Intensive diabetic research, stimulated by the introduction of Orinase, has led many investigators to revise the very concept of diabetes as a single clinical entity, and to coin the term "*Orinase-positive*" diabetes. Oral therapy of "*Orinase-positive*" diabetics presents the following advantages:

Better control of diabetes

Orinase-responsive patients show more stable blood sugar levels and less glycosuria on Orinase than on insulin. Because Orinase acts via *endogenous* insulin, daily control of diabetes is smoother; "peaks and valleys" typical of exogenous insulin are leveled out.

Greater freedom from hypoglycemia

Patients on Orinase rarely experience hypoglycemic reactions. Even when hypoglycemia does occur, it is milder and more amenable to therapy than insulin (hypoglycemic) reactions.

Side effects—few and minor

Side effects attributable to Orinase occur in about 3% of cases, and only half of these necessitate withdrawal of Orinase. Most common are skin rashes or mild gastrointestinal upsets.

No known toxicity

Careful observations of large series of patients maintained on Orinase for more than two years revealed no damage to the liver, blood, kidneys, or pancreas. Orinase is not goitrogenic.

Painless management of diabetes

Simple, easy, oral administration eliminates subcutaneous fat atrophy and frequent allergic reactions to insulin.

No increase in insulin requirements

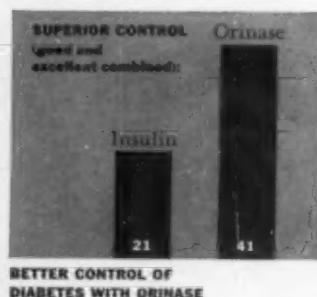
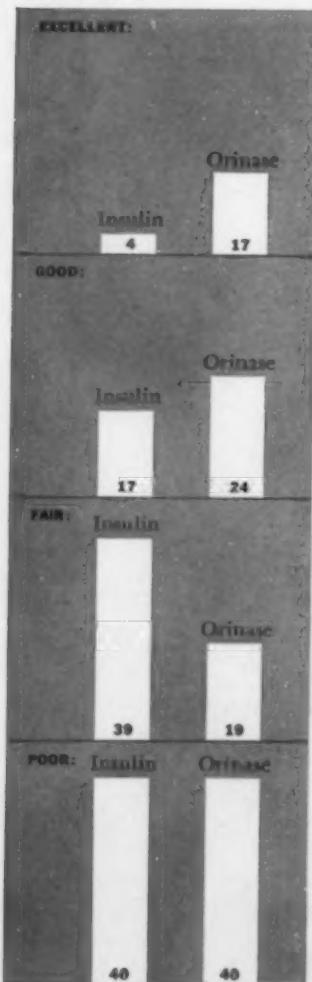
Even after prolonged Orinase therapy, patients scarcely ever show any increase in insulin requirements. In fact, such increase on Orinase is *less common than on insulin*.

No impairment of diabetic status

Orinase therapy does not aggravate the underlying diabetic pathology. In some cases, there may be an actual improvement or even a remission.

QUALITY OF DIABETIC CONTROL IN 100 PATIENTS ON ORINASE COMPARED WITH CONTROL ON INSULIN¹

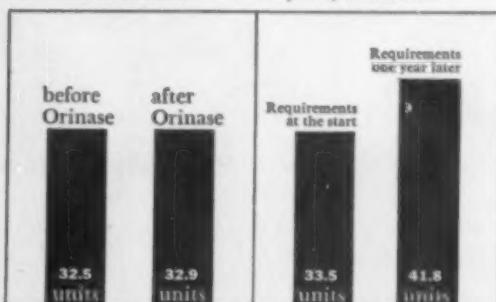
Control rating:



NO INCREASE IN INSULIN REQUIREMENTS ON ORINASE²

Change in average insulin requirements of 30 diabetics resuming insulin after 1-15 months on Orinase

Change in average insulin requirements of 100 diabetics after one year of insulin alone



1. Based on the data of McKendry, J. B. R.; Kueyti, K., and Segal, L. A.: *Canad. M. A. J.* 77:429 (Sept. 1) 1957.

2. Based on the data of Moffler, E. F.: *J. Endocrinol.* 118:111 (June) 1957.

Subjective advantages of Orinase

"The extreme satisfaction of patients whose conditions are now controlled with tolbutamide is immeasurable."

Breneman, J. C.: *J.A.M.A.* 164:627 (June 8) 1957.

ORINASE HELPS CORRECT MAJOR DISLOCATIONS IN THE LIFE PATTERN OF DIABETICS

Orinase tends to restore emotional balance

Diagnosis of diabetes, usually coming late in life and carrying with it a long sentence of daily fear and anxiety, profoundly upsets the emotional balance of the average patient. Adjustment to radical changes in daily living is difficult. Daily injections, special meal schedules, and new limitations on activities make the patient feel "set apart." Oral therapy simplifies life, brings it closer to normal, helps restore a cheerful, hopeful outlook.

Sense of personal freedom regained on Orinase

No longer tied to a refrigerator, sterilizing apparatus, nearest restaurant, and rigid schedules, a diabetic on Orinase can enjoy travel and a variety of personal activities, free from the tyranny of the clock and the threat of hypoglycemia.

Orinase makes diabetes easier on the patient's family

With no dependence on members of the family for diabetic care, the patient can resume a more normal place in the family circle.

Orinase permits occupational continuity

Because of the hazards of hypoglycemic shock, some diabetics are forced to give up their customary occupations, or must limit and curtail their working hours—as may be the case with traveling salesmen, business executives, and others with unpredictable work schedules. On Orinase, patients usually can continue their normal occupations.

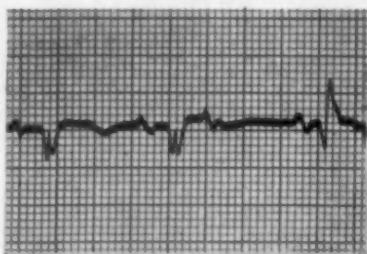
Normal social life made possible by Orinase

"Orinase-positive" diabetics can visit their friends, without the embarrassing necessity of meals at special hours...can participate in community life and social events in a more normal fashion.

Stability and sense of well-being on Orinase

Patients report an increased sense of stability and well-being...they are less irritable...their mood and outlook are improved.

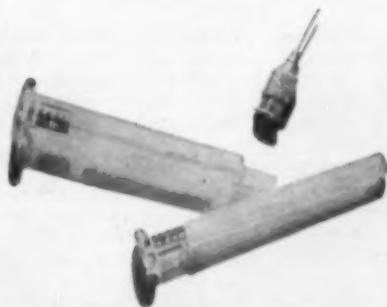
ADDED ADVANTAGES OF ORINASE IN DIABETICS WITH SPECIAL PROBLEMS



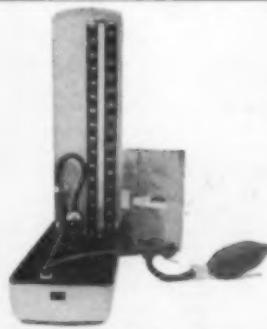
IN THE DIABETIC WITH CARDIOVASCULAR COMPLICATIONS, Orinase helps avoid superimposed hypoglycemic stress



IN THE OBESIVE DIABETIC, Orinase helps reinforce dietary discipline



IN THE DIABETIC WITH FEAR OF INJECTIONS, Orinase affords greater equanimity through oral control



IN THE DIABETIC WITH HYPERTENSION, Orinase reduces the pressure of rigid schedules



IN THE DIABETIC WITH TREMOR, Orinase overcomes the possibility of inaccurate self-injection



IN THE DIABETIC WITH IRREGULAR WORKING HOURS, Orinase removes the "tyranny of the clock" from the patient's therapeutic regimen

A New Life in **THE ORINASE EPOCH**

J.D.—FEMALE—AGE 32

Jane D., a successful commercial artist, now 32 years of age, had a sudden onset of diabetes in her early twenties after going through what seemed an



unduly prolonged and difficult recovery from a severe infection. At that time, she also experienced concomitant emotional upsets. When the diagnosis of diabetes was confirmed by a fasting blood sugar of 230 mg. per 100 cc. and 4 plus sugar in the urine, Jane was placed on 40 units of NPH insulin in the morning, and 5 units at night to prevent nocturnal hyperglycemia. She was ordered to maintain a restricted diet. Good control was established after a few hypoglycemic episodes secondary to disruption of her meal schedule.

When she returned to her drawing board after her illness and began her diabetic regimen, Jane found that her ability to function was impaired. She "felt ashamed" of her diabetes and refused to discuss it with anyone. She described herself as "limited emotionally" in both her business and social life. She "cheated" on



her diet and suffered accordingly, physically and psychologically. Because her work as an artist required her to conform to demands of clients for business meetings at odd hours and to complete assignments on rigid deadlines, she found herself under increasingly

severe tensions. These, and her somewhat exaggerated fears of possible hypoglycemic reactions, carried over into her social activities as well.

The transfer to Orinase

Ten months ago, Jane's physician successfully transferred her from insulin to oral control with Orinase, establishing excellent balance on 0.5 Gm. t.i.d. Although she had become inured to her insulin injections, she found other factors in the oral medication providing definite advantages: less effort; emotional release from many of her former fears and tensions; greater freedom to work on irregular schedules; and ability to confront possible disruption of her mealtime.

Jane D. now leads a more normal existence. She is able to work consistently despite her irregular schedule. She is more relaxed in all her activities, and finds that her "consciousness of diabetes" has been virtually eliminated.

This case, illustrating some of the changing aspects of diabetes control offered by oral management, is based on actual clinical data.





(Vol. 26, No. 12) December 1958

79a

THE ORINASE EPOCH

BREAKTHROUGH FOR THE PATIENT

A more normal, more secure life for the majority of diabetics.

BREAKTHROUGH FOR THE PHYSICIAN

Smoother control, free from the danger of hypoglycemic shock.

BREAKTHROUGH FOR METABOLIC INVESTIGATORS

New stimulus and new evidence in searching for the final answers to diabetes.

ORINASE PRESCRIPTION INFORMATION

Dosage: Patients responsive to Orinase may begin therapy as follows:

First day 3 Gm.
Second day 2 Gm.
Third day 1 Gm.

Usual maintenance dose 1 Gm.
(must be adjusted to patient's response)

To change from insulin to Orinase:
If previous insulin dosage was less than

40 u./day reduce insulin 30% to 50% immediately; gradually reduce insulin dose if response to Orinase is observed.

more than 40 u./day reduce insulin 20% immediately; carefully reduce insulin beyond this point if response to Orinase is observed. In these patients, hospitalization should be considered during the transition period.

Prior to using Orinase in selected patients, the physician should perform a complete physical examination and indicated laboratory studies. During the initial test period, the patient should report to the physician daily, and for the first month at least once weekly for physical examination and blood sugar determination. After the first month, the patient should be examined at monthly intervals or more frequently as indicated.

The patient should be instructed to report immediately to his physician if he does not feel as well as usual.

It is especially important that the patient, because of the simplicity and ease of administration of Orinase, does not develop a careless attitude ("cheating" on his diet, for example) which may result in serious consequences and failures of treatment.

Supplied: In 0.5 Gm. scored tablets, bottles of 50.

Complete literature available on request.

Upjohn

The Upjohn Company
Kalamazoo, Michigan

ORINASE



Mediquiz

These questions were prepared especially for MEDICAL TIMES by the Professional Examination Service, a division of the American Public Health Association. Answers are on page 90a.

1. Diabetes mellitus may occur as a facet of an underlying disorder. Which one of the following groups of conditions contains only such disorders?

1. Cushing's syndrome, Addison's disease, Fanconi's syndrome, chronic pancreatitis.

2. Cushing's syndrome, acromegaly, hemochromatosis, chronic pancreatitis.

3. Pheochromocytoma, Cushing's syndrome, adrenogenital syndrome, Addison's disease.

4. Acromegaly, hemochromatosis, chronic pancreatitis, islet cell adenoma.

5. Renal glycosuria, acromegaly, hemochromatosis, Cushing's syndrome.

2. The serum cholesterol in myxedema is usually:

1. Normal.

2. Depressed.

3. Mostly in the unesterified fraction.

4. Elevated.

5. Confined mainly to macromolecules of the S_f 50 to 80 class.

3. A 35-year-old male who has a perforating foot ulcer, shooting pains about

the body, and deafness suffers most likely from:

1. Polyneuritis.

2. Multiple sclerosis.

3. Syringomyelia.

4. Leprosy.

5. Hereditary sensory radicular neuropathy.

4. A patient has irregular nodding movements of the head or grimacing. The most outstanding feature, however, is incoordination of voluntary movements. There is absence of knee jerks, deformity of the feet and scoliosis. All of the above symptoms should point to a diagnosis of:

1. Hysterical fit.

2. Epilepsy.

3. Parkinson's disease.

4. Spasmodic torticollis.

5. Friedreich's ataxia.

5. Anesthesia and analgesia of the sole of the foot and plantar surfaces of the toes indicates interruption of the:

1. Tibial or the posterior tibial nerve.

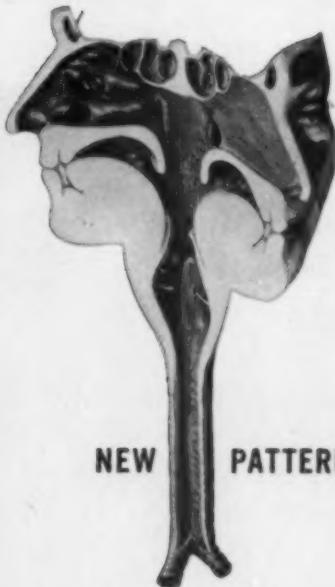
—Continued on page 96a



Latest advance
in treatment of
Sinus & Nasal
Congestion

new
"KRYL"

"KRYL" provides rapid relief from
the congestion as well as associated
headache, fever, aches and pains of colds
and allergic rhinitis — without
depression — without stimulation.



NEW PATTERN IN SINUS AND NASAL DECONGESTION

ANTIHISTAMINE ACTION
WITHOUT SEDATION

SYSTEMIC DECONGESTION
WITHOUT SIDE EFFECTS

ANALGESIC-ANTIPYRETIC ACTION
WITHOUT DRUG STIMULATION

ANTI-STRESS VITAMIN TO
MAINTAIN TISSUE INTEGRITY

"THERUHISTIN" — Newest type of antihistamine for control of excessive nasal secretion and congestion — highly potent (92 per cent effective)¹ yet unusually free from side effects — *less than one per cent incidence of drowsiness*.¹⁻³

l-Phenylephrine — Unusually long-acting *oral* vasoconstrictor⁴ relieves nasal blockage, promotes better drainage — without local pathologic changes reported with topical agents. Relieves bronchial spasm.

Aspirin and *Phenacetin* — Analgesic-antipyretic synergists, to relieve fever, aches and pains. Freedom from antihistamine drowsiness obviates need for drug stimulants.

Ascorbic Acid — High levels of vitamin C aid in preventing nasal edema due to impaired vascular and mucous membrane integrity,⁵ and replenish adrenal ascorbic acid reserves.⁶

new

"KRYL"

for symptomatic relief of colds, hay fever, and sinus congestion

Each tablet contains:

Isothiopendyl HCl ("Theruhistin")	4 mg.
Aspirin	230 mg.
Phenacetin	160 mg.
<i>l</i> -Phenylephrine HCl	5 mg.
Ascorbic Acid	100 mg.

DOSAGE: Adults, 2 tablets initially. Thereafter, and until symptoms disappear, 1 tablet every four hours. Children (6 to 12), half the adult dose.

SUPPLIED: Bottles of 100 and 1,000 tablets.

REFERENCES: 1. New and Unused Therapeutics Committee, Am. Coll. Allergists; Ann. Allergy 16:237 (May-June) 1958. 2. Spielman, A. D.: Ann. Allergy 16:242 (May-June) 1958. 3. Spielman, A. D.: New York J. Med. 57:3529 (Oct. 13) 1957. 4. Hunnicutt, L. G.: Bull. Vancouver M. A. 28:348 (July) 1952. 5. Hunnicutt, L. G.: Bull. Vancouver M. A. 28:352 (July) 1952. 6. Pirani, C. L.: Metabolism 1:197 (May) 1952.

Ayerst Laboratories, *Ayerst*

New York 16, N. Y. • Montreal, Canada

IN ACNE

**Fostex® degreases the skin
and helps remove blackheads**



Fostex contains a combination of surface active agents (Sebulytic*) which:

◀ Completely emulsify excess oil so that it is quickly washed off the skin.



◀ Penetrate and soften comedones, unblocking the pores and facilitating removal of sebum plugs.



Fostex dries and peels the skin

◀ The Sebulytic base of Fostex dries and promotes peeling of the skin . . . actions enhanced by the keratolytic effects of micropulverized sulfur and salicylic acid.

* (Sodium lauryl sulfacetate, sodium alkyl aryl polyether sulfonate, sodium dioctyl sulfosuccinate.)

FOSTEX CREAM
for therapeutic washing of skin in the initial phase of acne treatment, when maximum degreasing and peeling are desired.

FOSTEX CAKE
for maintenance therapy to keep skin dry and substantially free of comedones.

Fostex is easy for your patients to use

◀ Patients stop using soap on affected skin areas. Instead they use Fostex for therapeutic washing of the skin. The Fostex lather is massaged into the skin for 5 minutes—then rinse and dry.

Write for samples

WESTWOOD Pharmaceuticals
Division of Foster-Milburn Co. Buffalo 13, New York

make life more livable...

by
reversing
the body's
metabolic age:



*the full anabolic benefits of androgen-estrogen therapy
plus vitamin-mineral supplementation*

NEW!

DUMOGRAN

SQUIBB ANABOLIC HORMONES WITH VITAMINS AND MINERALS

For both men and women: restores muscle tone • promotes emotional balance, mental acuity, and a feeling of well-being and self-esteem in geriatric patients • corrects hormonal imbalance • controls the symptoms and sequelae of the climacteric • strengthens bone and relieves back-ache in many cases • relieves many ill-defined complaints.

Bottles of 60 and 250 capsule-shaped tablets. Usual dosage: 2 tablets daily.

also available: DUMONE (Squibb Methyltestosterone and Ethynodiol)-
for convenient oral administration

DELADUMONE (Squibb Testosterone Enanthate and Estradiol Valerate)-
for long-acting intramuscular administration

SQUIBB



Squibb Quality — the Priceless Ingredient

Dumogran, *Dumone*® and *Deladumone*® are Squibb trademarks

2. Common peroneal nerve.
3. Deep peroneal nerve.
4. Entire femoral nerve.
5. Superficial peroneal nerve.

6. In most cases of osteomalacia due to renal acidosis, the renal disease responsible is:
1. Lipoid nephrosis.
2. Chronic glomerulonephritis.
3. Malignant nephrosclerosis.
4. Intercapillary glomerulosclerosis.
5. Chronic pyelonephritis.

7. In congestive heart failure the bilirubin content of the blood is nearly always raised and clinical jaundice may be present. In addition to excess blood destruction, a factor responsible for this form of bilirubinemia is:
1. Anoxemia of the liver cells due to venous stasis.
2. Obstruction of bile ducts due to congestive swelling.
3. Toxic necrosis of liver cells due to reduced kidney function.
4. Reduced circulation with a reduction in bilirubin passed through the kidney.
5. Anoxemia of kidney cells with resultant reduced bilirubin excretion.

8. The presence of precordial distress, pericardial friction rub, and elevation of the RS-T segment is often seen in:
1. Inactive rheumatic heart disease.
2. Pulmonary infarction.
3. Acute pericarditis.
4. Angina pectoris.
5. Essential hypertension.

9. Which of the following statements is valid for dynamically oriented psychotherapy with emotionally disturbed adolescents?
1. Parents must always participate actively in treatment if the child is to maintain gains from his treatment.
2. It is essential that parents and adolescents be seen by different therapists to avoid competition for the therapist's favor.
3. When the therapist knows that adolescent complaints about parental mistreatment are justified, he should actively intervene in the situation by contacting the parents directly.
4. It is occasionally in order for the therapist to advise adolescents directly about behavior (smoking, drinking, jobs, sex conduct, etc.).
5. It is generally a poor prognostic sign when an adolescent breaks an appointment after an initial period of regular attendance.

10. The characteristic ovarian change associated with hydatidiform mole is the development of:
1. Lutein cysts.
2. A persistent corpus luteum of pregnancy.
3. Abnormal ovulation.
4. Bilateral atrophy.
5. Multiple follicular cysts.

11. A 30-year-old woman is seen for a routine examination 3 months post partum. Psychiatric consultation is most urgently called for if she complains:
1. Of uncontrollable irritability directed toward her children.
2. Of complete loss of libido, with

—Concluded on page 90a

Butazolidin®

(phenylbutazone Geigy)

... in a wide range of inflammatory
indications

arthritis • phlebitic • rheumatic

200
years Geigy



Geigy

Ardsley, N. Y.

Broad-Spectrum Efficacy: Over 1,000 published papers* attest to the efficacy of Butazolidin in a wide variety of arthritic and rheumatic indications. In a recent study,¹ Butazolidin proved to be especially effective in the management of rheumatoid spondylitis and gouty arthritis. Favorable results were also observed in rheumatoid arthritis, osteoarthritis, the painful shoulder syndrome and miscellaneous other musculoskeletal conditions of an inflammatory nature.

Confirmatory evidence from other areas of therapy include dramatic resolution of superficial thrombophlebitis.²

Broad-Spectrum Clinical Benefits: Therapy with Butazolidin usually provides comprehensive symptomatic improvement. Relief of pain is effective and prompt in 75% of the patients. Early improvement of function and range of mobility are commonly reported. In acute cases there is a significant and early resolution of inflammation, effusion and spasm.

(1) Robins, H. M.; Lockie, L. M.; Norcross, B.; Latona, S., and Riordan, D. J.: Am. Pract. & Digest Treat. 8:1750, 1957. (2) Stein, I. D.: Circulation 12:833, 1955.

*Complete bibliography furnished on request.

BUTAZOLIDIN® (phenylbutazone Geigy): Red coated tablets of 100 mg. **BUTAZOLIDIN® Alka:** Capsules containing BUTAZOLIDIN (phenylbutazone Geigy) 100 mg.; aluminum hydroxide 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide 1.25 mg.

B6977

original silhouette hand cut by Mochi



to meet the threat of excess weight gain
in your obstetrical patients

31 PRELUDIN®
(brand of phenmetrazine hydrochloride)

43 44 45 46 47

specifically for weight reduction

In a controlled study of obesity in pregnancy,¹ PRELUDIN[®]... proved to be a reliable and effective anorexigenic agent, harmless to the patient and her pregnancy.² Fifty patients treated with PRELUDIN during the third trimester were held to an average weekly gain of 0.18 pounds as compared to 0.94 pounds in the untreated group. Blood pressures remained within normal limits; no evidence of toxicity, habituation or allergy was noted.³ The effectiveness of PRELUDIN for weight control in obstetrics has been confirmed by others.^{2,3,4} With PRELUDIN, there is no interference with labor or aggravation of the common tensions of pregnancy.^{4,3,4}

(1) Birnberg, C. H., and Abitbol, M. M.: Obst. & Gynec. 11:463, 1958. (2) Bocci, A., and Davitti, L.: Minerva ginec. Torino 9:15, 1957. (3) Roncuzzi, R.: Riv. ostet. e ginec. 11:734, 1958. (4) Whitelaw, J. M.: Phenmetrazine (Preludin) A Double-blind Study in Weight Control During Pregnancy, to be published.

GEIGY

ARDSLEY, N. Y.

PRELUDIN[®] (brand of phenmetrazine hydrochloride). Scored, square, pink tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.

C I B A
U N I T Y , N. J.



pulse rate up?

Serpasil slows heart rate in most cases of organic or functional tachycardia.

You'll find it especially valuable in cardiac patients whose conditions are aggravated by heart speed-up. Through a unique heart-sloring action, independent of its antihypertensive effect, Serpasil prolongs diastole and allows more time for the myocardium to rest. Blood flow and cardiac efficiency are thereby enhanced.

What's more, you can prescribe Serpasil with confidence. Therapy with Serpasil is virtually free of the dangers (heart block and cardiac arrest) heretofore encountered with heart-sloring drugs. Side effects are generally mild and can be overcome by adjusting dosage.

DOSAGE FOR TACHYCARDIA

Dose range is 0.1 to 0.5 mg. (two 0.25-mg. tablets) per day conveniently taken in a single dose. Rapid heart rate usually will be relieved within 1 to 2 weeks, at which time the daily dose should be reduced. Suppression of tachycardia often persists after therapy is stopped.

NOTE: In patients receiving digitalis or quinidine, Serpasil therapy should be initiated with especially careful observation. Serpasil is not recommended in cases of aortic insufficiency.

SUPPLIED: Tablets, 1 mg. (scored), 0.25 mg. (scored) and 0.1 mg. Elixirs, 1 mg. and 0.2 mg. Serpasil per 4-ml. teaspoon.

**slow it down
with
Serpasil®**

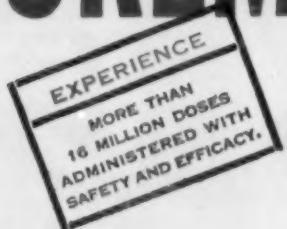
© 1958 CIBA

(responsible CIBA)

in all
diarrheas

CREMOMYCIN®

SUCCINYL SULFATHIAZOLE-NEOMYCIN SUSPENSION
WITH PECTIN & KAOLIN



regardless of
etiology



MERCK SHARP & DOHME

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

CREMOMYCIN is a trademark of Merck & Co., Inc.



you can clear topical infections promptly with

NEO-POLYCIN*

...because Neo-Polycin provides 3 preferred topical antibiotics

NEOMYCIN / BACITRACIN / POLYMYXIN

*in the unique Fuzene® base which releases greater antibiotic concentrations
than do ordinary grease-base ointments.*

NEO-POLYCIN covers the entire range of bacteria most often found in topical lesions...has a low index of sensitivity...averts the risk of sensitization to lifesaving antibiotics, since the antibiotics used in Neo-Polycin are rarely used systemically...is miscible with blood, pus and tissue exudates without loss of efficacy.

Each gram of Neo-Polycin Ointment contains 3 mg. of neomycin, 8000 units of polymyxin B sulfate and 400 units of bacitracin in the unique Fuzene (polyethylene glycol diester) base. Supplied in 15 Gm. tubes. Also supplied as Neo-Polycin Ophthalmic Ointment (anhydrous, lanolin-petrolatum base) in $\frac{1}{8}$ oz. tubes.

*Trademark



PITMAN-MOORE COMPANY • INDIANAPOLIS, INDIANA
DIVISION OF ALLIED LABORATORIES, INC.

bitter quarrels over sexual relations.

3. That she cannot sleep without sleeping pills.
4. Of feelings of tension recurring throughout the day.
5. That her husband and children do not like her and that life is not worthwhile.

12. The wife of a clearly neurotic patient complains that you have failed to care for her husband's needs and that he would have been awake all night, had it not been for Doctor A. The most appropriate response for you to make to the wife is to tell her that:

1. You will ask for a psychiatric consultation.
2. She must evaluate the patient's complaints in the light of his disturbed emotional state.
3. You will have the patient transferred to Doctor A.'s care.
4. You will talk with the patient.
5. She is not in a position to judge the situation without having further information.

13. The most common neoplasm of the subdiaphragmatic area in childhood is:

1. Neuroblastoma.
2. Lymphosarcoma.
3. Hemangiosarcoma.
4. Rhabdomyosarcoma.
5. Embryonal aden sarcoma.

14. The Schwartz's Test, in which the internal saphenous vein near the groin is palpated while a dilated varicosity in the leg is tapped with the fingers, is a test for:

1. Thrombosis of the deep veins.

2. Incompetence of the communicating veins.

3. Incompetence of valves of the internal saphenous vein.
4. Thrombosis of the saphenous vein.
5. Abnormal arteriovenous communications.

15. The most widely used operative procedure for the treatment of congenital hypertrophic pyloric stenosis of infants was developed by:

1. Ladd and Gross.
2. Fredet and Ramstedt.
3. Sir Arthur Keith.
4. William S. Halsted.
5. Charles W. Mayo.

16. The usual incubation period of brucellosis in children is about:

1. 2 days.
2. 1 week.
3. 2 weeks.
4. 3-4 weeks.
5. 6-8 weeks.

17. A cause of metabolic cataracts is:

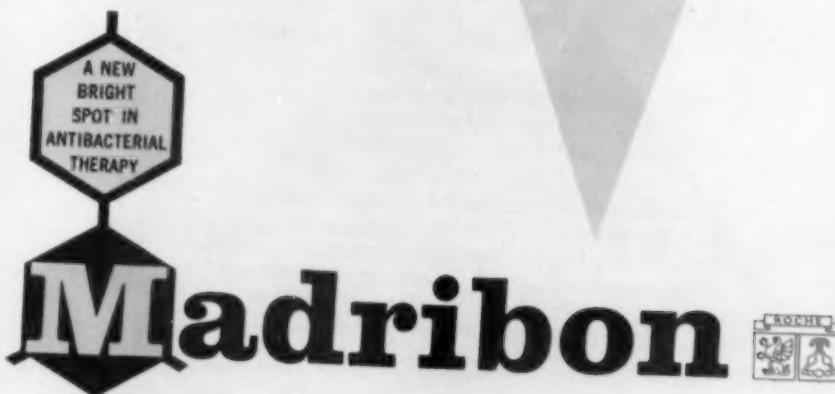
1. Chronic hypoglycemia.
2. Chronic tetany.
3. Addison's disease.
4. Hyperthyroidism.
5. Vitamin D deficiency.

MEDIQUIZ ANSWERS

1(2), 2(4), 3(5), 4(5),
5(1), 6(5), 7(1), 8(3),
9(4), 10(1), 11(5), 12(4),
13(5), 14(3), 15(2), 16(3),
17(2).

NEW

new antibacterial
new chemical entity
new high in
effectiveness
new low in side
reactions



MADRIBON™—brand of 2,4-dimethoxy-6-sulfanamido-1,3-dioxine
ROCHE—Reg. U. S. Pat. Off.

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc. • Nutley 10 • N. J.



Cerofort

POTENTIATES TISSUE PROTEIN SYNTHESIS

Critically
essential L-lysine
with all the
important vitamins

tablets

To speed
convalescence
in major
surgery, illness,
injury.

Efficient
protein syn-
thesis depends
upon an adequate
intake of proper proportions
of all the essential amino acids
simultaneously. The biological value
of cereal proteins, which comprise 20% to
40% of total dietary proteins, is limited by a
relative deficiency of lysine. Cerofort supplies
physiologic amounts of L-lysine to raise the body-building
value of many cereals to that of high quality protein. In
addition, Cerofort Elixir supplies generous amounts of important
appetite-stimulating B vitamins. Cerofort Tablets provide therapeutic
levels of all known essential vitamins. In order to obtain the optimal
benefit of lysine supplementation, administration with meals is essential.

DOSAGE: 1 Tablet
L.I.D. with meals.
Cerofort Tablets
in bottles of 60.

WHITE LABORATORIES, INC., Keweenaw, Mich.

White's

first with lysine

DOSAGE: 1 tsp. L.I.D.
with meals.
Cerofort Elixir
in bottles of 8 oz.

NEW

realistic therapy in pneumonia



A 13-year-old girl with penicillin-resistant pneumonia received an initial dose of 1250 mg Madribon, followed by 625 mg daily. On the third day of Madribon treatment, the temperature returned to normal. X-rays showed marked improvement in the lung fields. She was discharged eight days later.¹



Madribon



Madribon, a completely new antibacterial, shows wide-spectrum activity against many common gram-positive and gram-negative pathogens, including staphylococci, streptococci, pneumococci, *E. coli*, *klebsiella* and *listeria*.

Low dose, 24-hour action. "The use of Madribon was very simple...."² A single, low dose of Madribon produces peak blood concentrations within 4 hours,

maintains them at near-constant level for the next 24 hours.^{2,4}

Safer. The incidence of side effects with Madribon is less than 3% in more than 5000 cases. Those reported were relatively mild—dizziness, nausea and vomiting. Because Madribon is excreted primarily as a highly soluble glucuronide, there is little likelihood of crystalluria or kidney damage.

MADRIBONTM
— brand of
2,4-dimethoxy-
6-sulfonamido-
1,3-diazine
ROCHE—Reg.
U. S. Pat. Off.

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MODERN MEDICINALS

These brief résumés of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Celginace, Mead Johnson & Co., Evansville, Indiana. Tablets or granules containing calcium and sodium alginates and dioctyl sodium sulfosuccinate. Indicated for constipation involving inadequacy of bulk; also when substances causing hard stools are ingested; when straining at stool is dangerous; when defecation is painful. *Dose*: One tablet or one measure (heaping teaspoon) of granules, 1 to 3 times daily, with water or juice (lower dose for children according to age and weight). *Sup*: Bottles of 30 and 60 tablets, cans of 147 and 294 Gm. granules.

Corilin, Schering Corporation, Bloomfield, New Jersey. Liquid analgesic, each cc. of which contains 0.75 mg. chlorprophen-pyridamine maleate, 80 mg. sodium salicylate, and 25 mg. glycine. Indicated for pediatric management of symptoms associated with colds, teething, inoculations and itching conditions. *Dose*: As directed by physician. *Sup*: Dropper bottles of 30 cc.

Cosa-Tetracydin, Pfizer Laboratories, Division of Chas. Pfizer & Co., Brooklyn, New York. Capsules, each containing 125 mg. glucosamine-potentiated tetracycline HCl, 120 mg. phenacetin, 30 mg. caffeine, 15 mg.

buclizine HCl, 150 mg. salicylamide. Indicated for palliative treatment of common cold symptoms and prevention of secondary complications and infections caused by susceptible organisms. *Dose*: Two capsules q.i.d. *Sup*: Bottles of 25.

Decadron, Merck Sharp & Dohme, Division Merck & Co., Inc., Philadelphia, Pennsylvania. Tablets of dexamethasone, either 0.75 or 0.5 mg. for rheumatoid arthritis, asthma, and a wide range of other allergic and inflammatory conditions. *Dose*: Orally, as directed by physician. *Sup*: Either size tablet in bottles of 100.

Desoxyn Gradumet, Abbott Laboratories, North Chicago, Illinois. New long-acting dosage form. Indicated in management of obesity, depression, narcolepsy, and Parkinsonism. *Dose*: As directed by physician. *Sup*: 5 mg., 10 mg., and 15 mg. gradumets in bottles of 50 and 500.

Dimetane-Ten and Dimetane-100 Injectable, A. H. Robins Company, Inc., Richmond, Virginia. Parenteral dosage forms of Dimetane. Dimetane-Ten contains 10 mg. parabromdylamine maleate per 1 cc., and Dimetane-100 contains 100 mg. per 1 cc. Indicated for rapid symptomatic relief of

—Continued on page 98a

NEW

realistic therapy in otitis media



The new antibacterial
Madribon has achieved
therapeutic success in
65 of 72 patients with otitis
media.¹ Madribon proves
highly effective against
many gram-positive and
gram-negative pathogens,
including staphylococci,
streptococci, pneumococci,
E. coli, klebsiella and listeria.



Low dose, 24-hour action.
"The use of Madribon was
very simple...."³ A single, low dose
of Madribon produces peak blood
concentrations within 4 hours,
maintains them at near-constant
level for the next 24 hours.^{2,4}

Madribon



Safer. The incidence of side effects with
Madribon is less than 3% in more than 5000
cases. Those reported were relatively mild—
dizziness, nausea and vomiting. Because
Madribon is excreted primarily as a highly
soluble glucuronide, there is little likelihood
of crystalluria or kidney damage.

MADRIBONTM
—brand of
2,4-dimethoxy-
6-sulfanilamido-
1,3-diazine
ROCHE—Reg.
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single-tablet control of bronchospasm

*a coat
of relief*

*a core
of protection*

CHOLARACE provides comprehensive control of bronchospasm particularly in ephedrine-fast, ephedrine-sensitive patients.

1. In the tablet coat—*prompt* bronchodilatation with less CNS stimulation than ephedrine, and mild sedation free of barbiturate "hangover". Contains rac-ephedrine HCl (20 mg.) plus pentobarbital (27.5 mg.).

2. In the tablet core—*sustained* bronchodilatation with virtually no gastric irritation. Contains 200 mg. of well-tolerated oxtriphylline (Choledyl®).

CHOLARACE—1 tablet q.i.d.—tides the patient over acute attacks and builds protection against recurrence. CHOLARACE is preferred in the asthma patient prone to ephedrine-induced hypertension, palpitations or urinary difficulties.¹ Oxtriphylline (the choline salt of theophylline) is better tolerated than most other oral forms of xanthines by geriatric and adolescent patients alike.^{2,3}

1. Scherr, M. S.: *Ann. Allergy*, 16:247-251, 1958. 2. Tuft, H. S.: *Ann. Allergy*, 15:420-422, 1957. 3. Brown, E. A. and Clancy, R. E.: *Ann. Allergy*, 13:543-550.

Cholarace®

for complete bronchospasm control



NEW

realistic therapy in respiratory infections

A completely
new antibacterial

Low dose,
24-hour action

Safer

References: 1. E. H. Townsend and A. Borgstedt, Paper read at the Sixth Annual Symposium on Antibiotics, Washington, D.C., October 15-17, 1958. 2. S. Ross, J. R. Puig and E. A. Zaremba, Paper read at the Sixth Annual Symposium on Antibiotics, Washington, D.C., October 15-17, 1958. 3. W. A. Leff, Paper read at the New Jersey Chapter of the American Federation for Clinical Research, East Orange, N. J., September 17, 1958. 4. W. P. Boger, Paper read at the Sixth Annual Symposium on Antibiotics, Washington, D.C., October 15-17, 1958.



Madribon



DOSAGE	TABLETS		SUSPENSION (teasp.)	
	Initially	q. 24 h.	Initially	q. 24 h.
ADULTS:	2	1	4	2
CHILDREN:				
20 lbs	1/2	1/4	1	1/2
40 lbs	1	1/2	2	1
80 lbs	2	1	4	2

The above dosage should be doubled in severe infections requiring more intensive therapy. Continue therapy for 5 to 7 days, or until patient is asymptomatic for at least 48 hours.

Tablets, 0.5 Gm
Suspension, 0.25 Gm/teasp.

Caution: The usual precautions in sulfonamide therapy should be observed, including the maintenance of adequate fluid intake. If toxic reactions or blood dyscrasias occur, use of the drug should be discontinued. As is true of all sulfonamides, Madribon is probably contraindicated in premature infants.

MADRIBON™
— brand of
2,4-dimethoxy-
6-sulfanilamido-
1,3-diazine

ROCHE — Reg.
U. S. Pat. Off.

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc • Nutley 10 • N. J.

many manifestations of the allergic state, such as hyposensitization reactions, reactions to drugs and blood transfusions, urticaria, allergic rhinitis and many pruritic dermatoses. *Dose:* As directed by physician. *Sup:* Dimetane-Ten 1 cc. ampuls in boxes of 6. Dimetane-100 2 cc. vials in boxes of 1.

Kryl, Ayerst Laboratories, New York, New York. Tablets, each containing 4 mg. isothipendyl HCl, 230 mg. aspirin, 160 mg. phenacetin, 5 mg. *l*-phenylephrine HCl, and 100 mg. ascorbic acid. Indicated for symptomatic relief of colds, hay fever, and sinus congestion. *Dose:* Initial recommended adult dose, 2 tablets; then 1 tablet every four hours until symptoms disappear. Children (6 to 12), half the adult dose. *Sup:* Bottles of 100 and 1000.

Kynex Pediatric Suspension, Lederle Laboratories Division, American Cyanamid Co., Pearl River, N. Y. Each 5 cc. teaspoonful contains 250 mg. sulfamethoxypyridazine. Indicated for treatment of genitourinary and upper respiratory infections, bacillary dysenteries and surgical and soft tissue infections due to sulfonamide sensitive organisms. *Dose:* As directed by physician. *Sup:* Bottles of 4 oz.

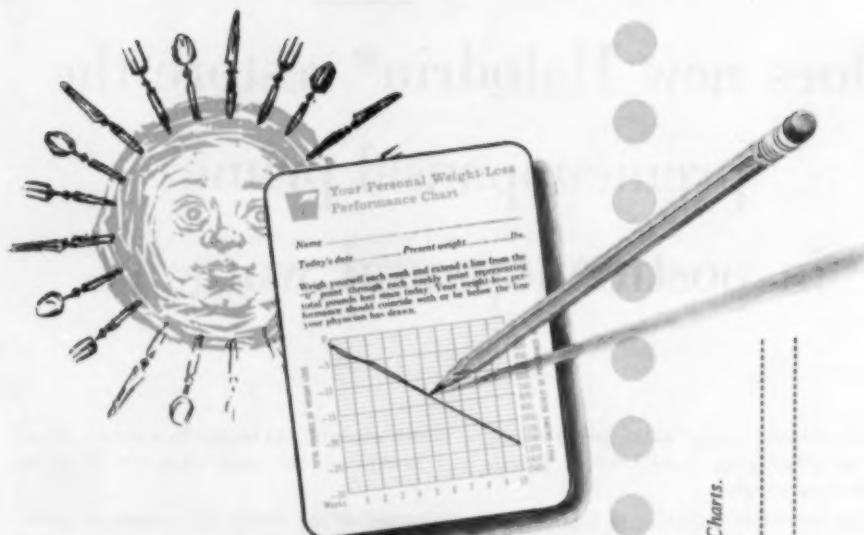
Madribon, Roche Laboratories, Division of Hoffmann-LaRoche Inc., Nutley, New Jersey. 2,4-dimethoxy-6-sulfamilamido-1,3-diazine. Upper respir-

atory, systemic and urinary tract infections. *Dose:* Adults, 1.0 Gm. (2 tablets) initially, followed by 0.5 Gm. (1 tablet) daily thereafter. Children, 0.25 Gm. per 20 lbs. body weight initially, followed by $\frac{1}{2}$ the initial dose every 24 hours thereafter. In severe infections, both the initial and subsequent doses should be doubled. *Sup:* 0.5 Gm. tablets in bottles of 30, 250, and 1000. Suspension (0.25 Gm. per teaspoonful) in bottles of 4 oz. and 16 oz.

Mycostatin Cream, E. R. Squibb & Sons, Division of Olin-Mathieson Chemical Corp., New York, New York. Vanishing cream base containing 100,000 units of nystatin per Gram. Indicated for treatment of fungus infections of the skin caused by *Candida albicans* (monilia). *Use:* Apply directly to affected areas once to several times daily until healing is complete. *Sup:* Tubes of 15 Gr.

Phenergan Fortis, Wyeth Laboratories, Philadelphia, Pennsylvania. Higher potency preparations of Phenergan (promethazine Wyeth). Syrup contains in each 5 cc. teaspoonful, 25 mg. Phenergan Hydrochloride. Injection form contains 50 mg. Phenergan to each cc. New tablet contains 50 mg. Phenergan. Indicated for nocturnal sedation for children and adults; psychic sedation to control apprehension and anxiety attendant on surgical procedures; prophylaxis and treatment of motion sickness,

—Concluded on page 102a



in obesity management ...the incentive plan

**YOUR PATIENT CHARTS HIS OWN
PERFORMANCE LINE against your PREDICTION LINE**

In giving each patient his ten-week chart of predicted weight-loss, you provide weekly goals as incentives for adhering strictly to your prescribed diet.

As the patient records his weight-loss performance week by week on the same chart, he experiences the satisfaction of achieving these goals you have set.

And, equally important, he quickly sees the consequences of caloric overindulgence.

Each packet of ten charts includes a calorie nomogram — a time-saver in determining predicted weight-loss on the reducing diet you prescribe.

Exclusively for physicians — A professional service of the
Florida Citrus Commission
Lakeland, Florida

Florida Citrus Commission • Lakeland, Florida
Please send me complimentary packet of ten Weight-Loss Performance Charts.

Name _____
 Address _____
 City _____
 Zone _____
 State _____

Exactly how does new Halodrin* restore the "premenopausal prime" in postmenopausal women?

Webster defines "prime" as the period of greatest health, strength, and beauty. In a woman, these are the childbearing years between puberty and menopause—the years when her hormone production is highest.

The inevitable reduction in this hormone production as she enters the menopause often results in physical discomfort in the form of hot flushes, nervousness, insomnia, or a multiplicity of other symptoms with which you are familiar. Superimposed on this physical picture is the psychic trauma brought on by this unavoidable evidence of aging. The thing that brings her to a physician is simply that she "feels bad."

You can't make her 35 again—but the odds are good that you can make her feel like it! The secret is a combination of reassurance and hormones. The exact form and amount of the former defy objective analysis, but the latter can now be provided with scientific precision. Reduced to essentials, here is the explanation of exactly how hormones—in the form of Upjohn's new Halodrin—restore the "premenopausal prime."

The normal premenopausal woman excretes estrogens in the urine in the form of estradiol, estrone, and estriol, in an approximate 28-day average ratio of 39:15:46. Starting with this urinary excretion of estrogens, it is possible to calculate backwards and estimate the amount of estradiol that must have been secreted endogenously in order to produce these urinary levels. This is possible because the proportion of estrogens which appears in the urine following parenteral administration has been established in castrated women.

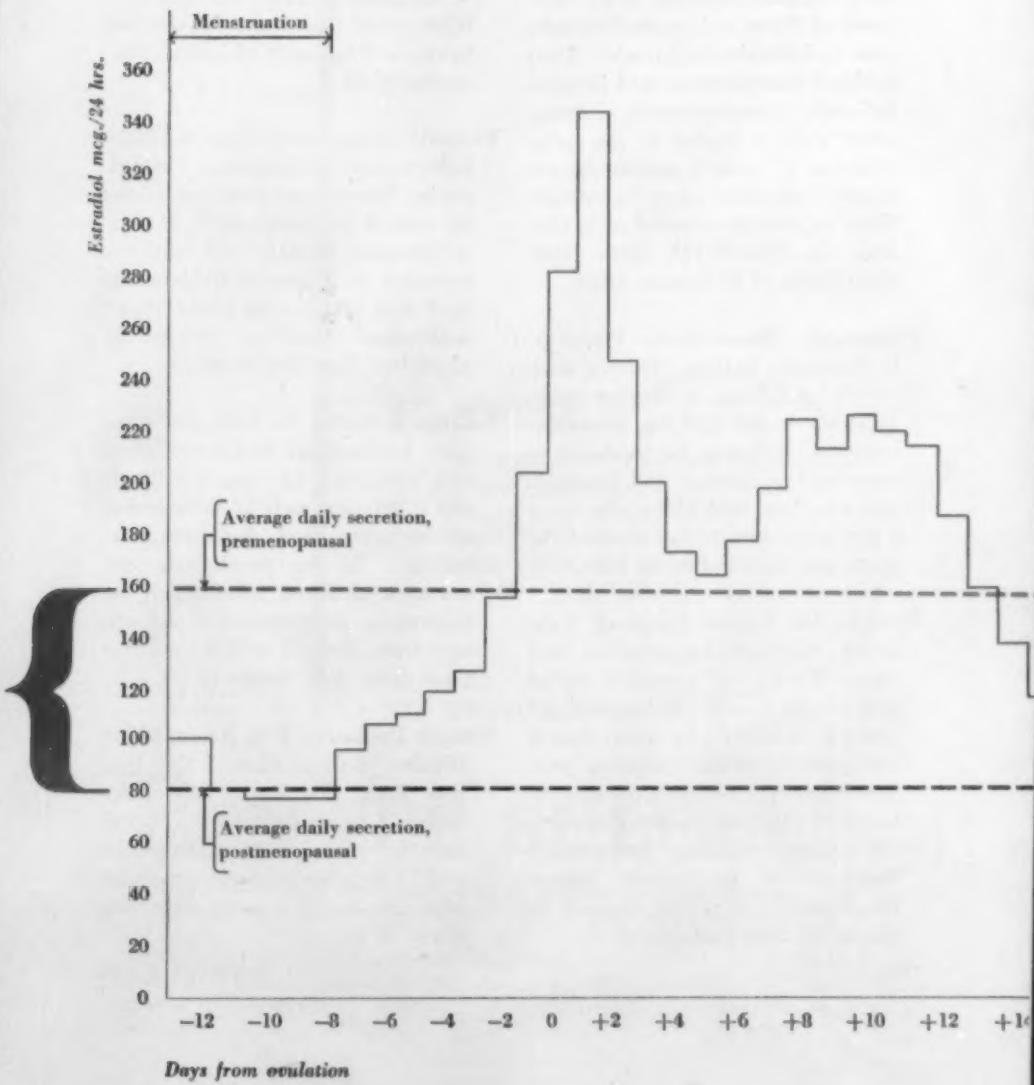
On this basis, the average endogenous output of estrogens is about 160 micrograms per day during a menstrual cycle, and 80 micrograms per day in postmenopausal women (see chart opposite). Therefore, the restoration of the "premenopausal prime" in the postmenopausal woman requires the replacement of approximately the equivalent of the 80 micrograms of estradiol per day that she no longer secretes endogenously.

Oral ethynodiol diacetate is about 2 to 2½ times as potent as parenteral estradiol. Therefore, the replacement of 80 micrograms of endogenous estradiol production per day is accomplished by the oral administration of 32 to 40 micrograms of ethynodiol diacetate per day.

Each Halodrin tablet contains 20 micrograms of ethynodiol diacetate, which means that the recommended dosage of 2 tablets per day provides 40 micrograms of ethynodiol diacetate. This offsets the loss of 80 micrograms of endogenous estradiol production in the menopausal woman; i.e., restores the "premenopausal prime."

Each Halodrin tablet also contains 1 mg. of Upjohn-developed Halotestin® (fluoxymesterone)—the most potent oral androgen known. The primary purpose is to "buffer" the ethynodiol diacetate just enough to prevent breakthrough bleeding, which is obviously undesirable in the menopause. It also exerts other beneficial hormonal effects, one of which, in common with ethynodiol diacetate, is a powerful anabolic action so desirable in patients of advanced years.

Endogenous estrogen secretion (meg./24 hours)
(calculated from average 24-hour urinary excretion
of estradiol, estrone, and estriol)



nausea and vomiting; and management of allergic conditions amenable to antihistaminic therapy. *Dose:* As directed by physician. *Sup:* Syrup in bottles of 1 pt., Injection in 1 cc. ampuls or 10 cc. vials, 50 mg. Tablet in bottles of 100.

Phenistix, Ames Company, Inc., Elkhart, Indiana. Reagent strips composed of ferric and magnesium salts plus cyclohexylsulfamic acid. Used to detect phenylpyruvic acid in urine indicating phenylketonuria. Impregnated strip is dipped in the urine specimen or pressed against the wet diaper until thoroughly moistened. Color on strip is compared with color scale on PHENISTIX bottle label. *Sup:* Bottle of 50 reagent strips.

Protalba-R, Pitman-Moore Company, Indianapolis, Indiana. Tablets, each containing 0.2 mg. crystalline proterveratrine A, and 0.03 mg. crystalline reserpine. Indicated for treatment of essential hypertension and hypertension associated with kidney disease or pregnancy. *Dose:* As directed by physician. *Sup:* Bottles of 100.

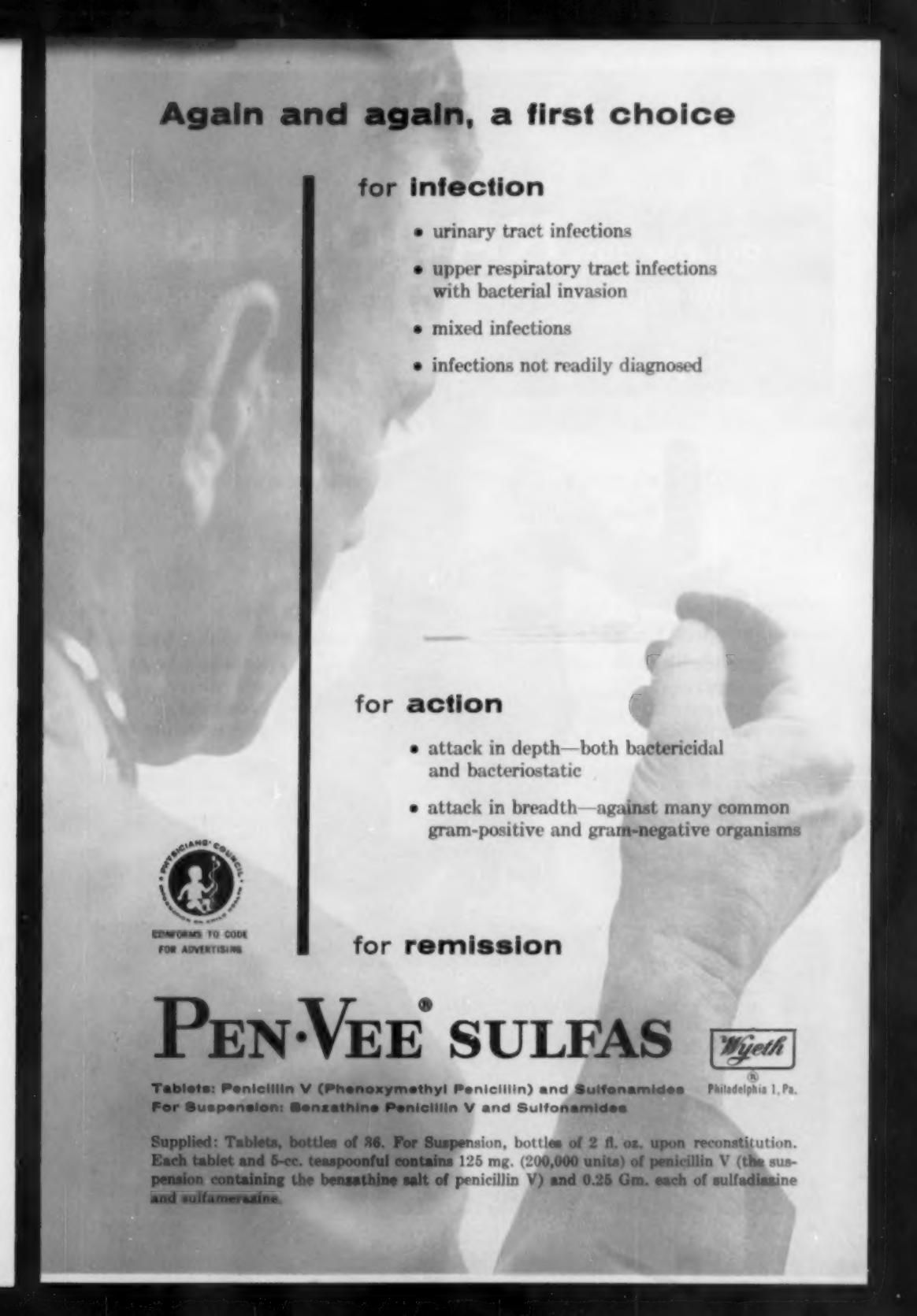
Protef, The Upjohn Company, Kalamazoo, Michigan. Suppositories, each containing 15 mg. neomycin sulfate and 15 mg. Cortef (hydrocortisone) acetate. Indicated for anal fissure, postoperative edema, radiation proctitis, cryptitis, papillitis, nonspecific localized proctitis, anusitis, mechanical trauma, irritation, postoperative treatment of fistulectomy, hemorrhoidectomy. *Use:* As directed by physician. *Sup:* Packages of 12.

Sinutab, Warner-Chilcott Laboratories, Morris Plains, New Jersey. Tablets, each containing 150 mg. N-acetyl-para-aminophenol, 150 mg. acetophenetidin, 25 mg. phenylpropanolamine HCl, and 22 mg. phenyltoloxamine dihydrogen citrate. Indicated for the treatment and prevention of sinus headache. *Dose:* At first sign of headache, 2 tablets followed by 1 tablet every four hours; dosage not to exceed 6 tablets in 24 hours. *Sup:* Bottles of 30.

Temaril Syrup, Smith Kline & French Laboratories, Philadelphia, Pennsylvania. New dosage form, containing in each 5 cc. teaspoonful 2.5 mg. trimeprazine tartrate. Indicated for treatment of itching in children, the aged and others who prefer liquid medication. *Dose:* As directed by physician. *Sup:* Bottles of 4 oz.

V-Cillin K Sulfa, Eli Lilly and Company, Indianapolis, Indiana. Tablets, each containing 125 mg. V-Cillin K and 0.167 Gm. each of sulfadiazine, sulfamerazine, and Sulfamethazine. Indicated in the prophylaxis and treatment of mixed infections of the respiratory, gastrointestinal, and urinary tract. *Dose:* 1 or 2 tablets four times daily. *Sup:* Bottles of 50.

Viterra Pediatric, J. B. Roerig & Co., Division of Chas. Pfizer & Co., Inc., New York, New York. New multi-vitamin formula for infants and children in a convenient metered flo-pak. One press on dispenser administers one dose in a spoon. *Sup:* Bottles of 50 cc.



Again and again, a first choice

for infection

- urinary tract infections
- upper respiratory tract infections with bacterial invasion
- mixed infections
- infections not readily diagnosed

for action

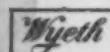
- attack in depth—both bactericidal and bacteriostatic
- attack in breadth—against many common gram-positive and gram-negative organisms



CONFORMS TO CODE
FOR ADVERTISING

for remission

PEN-VEE® SULFAS



®
Wyeth

Tablets: Penicillin V (Phenoxyethyl Penicillin) and Sulfonamides
For Suspension: Benzathine Penicillin V and Sulfonamides

Philadelphia 1, Pa.

Supplied: Tablets, bottles of 36. For Suspension, bottles of 2 fl. oz. upon reconstitution. Each tablet and 5-cc. teaspoonful contains 125 mg. (200,000 units) of penicillin V (the suspension containing the benzathine salt of penicillin V) and 0.25 Gm. each of sulfadiazine and sulfamerazine.

when you treat hypertensive patients

double duty RAUDIXIN
Squibb Standardized Whole Root Rauvolfia Serpentina
is the solid base line for successful therapy

*Raudixin helps
you relieve
pressures in
your patients*

Raudixin "lowers blood pressure and slows the pulse rate much more efficiently than the barbiturates... It is not habit-forming and is synergistic with all other known hypotensive drugs."¹⁰

*Raudixin helps
you relieve
pressures on
your patients*

Raudixin "relieves anxiety and tension, particularly the tension headache of the mild hypertensive patient, better than any other drug."¹¹

RAUDIXIN... "is the best symptom reliever."¹²

In mild to moderate cases, Raudixin is frequently sufficient.

Base line therapy with Raudixin permits lower dosage of more toxic agents. The incidence and side effects of these agents are minimized. Diuretics often potentiate the antihypertensive effect of Raudixin.

10. Munro, F. A. Jr.: New York State J. Med. 57:2987 (Sept. 15) 1957.

SQUIBB



Squibb Quality—the Priceless Ingredient

RAUDIXIN is a Squibb trademark.

to pull your diarrhea patients back in shape rapidly

INTROMYCIN AROBON

two palatable antidiarrheals

FOR IMMEDIATE RELIEF OF SYMPTOMS AND A QUICKER RETURN TO NORMAL

formed stools are produced 5 times faster¹

lost electrolytes are replenished

water loss is better controlled

AROBON®—carob powder...demulcent and adsorbent...contains no chemotherapeutics, no sedatives, no narcotics

Arobon available in 5 oz. bottles.

INTROMYCIN™—carob powder plus Neomycin and Streptomycin...for infectious diarrheas

Intromycin available in 2½ oz. bottles.

1. Abella, P. U.: J. Pediat. 41:182, 1952.



PITMAN-MOORE COMPANY

DIVISION OF ALLIED LABORATORIES, INC., INDIANAPOLIS 6, INDIANA



Peppery Pearl's in a vitamin whirl

in the golden vitamin bottle (100's)

"More paprika!" she pants—and another fiery feast begins. Night after night after night. You'll be seeing her soon. Same old story. Avitaminosis. The long talk. New dietary. And maybe, Dayalets. Ten important vitamins in each compact Filmtab. Abbott

And for the extra potency of nine important minerals, remember Dayalets-M®, in apothecary bottles.



Dayalets®
(Abbott's Multiple Vitamin Tablets)

Vitamin A 3 mg. (10,000 units)
Vitamin D 25 mcg. (1000 units)
Thiamine Mononitrate 5 mg.
Riboflavin 5 mg.
Nicotinamide 25 mg.
Pyridoxine Hydrochloride 2 mg.
Vitamin B₁₂ (as cobalamin
concentrate) 2 mcg.
Folic Acid 0.25 mg.
Calcium Pantothenate 5 mg.
Ascorbic Acid 100 mg.

©Filmtab—Film-sealed tablets, Abbott;
pat. applied for

912188

• *The Choice
and Methods of
Treatment*

• DIABETES MELLITUS

• EDWIN L. RIPPY, M. D. Dallas, Texas*

One of the most dramatic human interest stories of our times is that of diabetes. This metabolic disorder, described vaguely but not understood by physicians of antiquity, was devastating to patients of all ages until the isolation and application of the hormone, insulin, to the therapy of human beings by Banting and Best in 1921.

The plight of the diabetic patient was well described by A. Trousseau, in 1870, while lecturing to a class of medical students in Paris. He was presenting a thirty-six-year-old male, obviously afflicted with diabetic ketosis, and stated in the courtly manner of the day: "Gentlemen, his glycosuria is of a bad kind, against which medical treatment cannot prevail. Whatever I do, the disease will resist my efforts . . . and ultimately prove fatal. I have prescribed 10 grains of legevated chalk to be taken daily . . . a restorative diet . . . the inhalation of oxygen . . . his death is imminent in 2 days."

Sir William Osler, perhaps the most astute medical thinker of his day, in his textbook of 1892, stated: "In children the disease (diabetes) is rapidly progressive, and may prove fatal in a few days." He was obligated to add, in discussing therapy: ". . . no drug appears to have a directly curative influence. Opium alone stands the test of experience as a remedy capable of limiting the progress of the disease." He further added: "The coma is an almost hopeless complication . . . 3% solution of sodium bicarbonate has been used intravenously, but the best that can be said is that it may give the patient a few more hours of complete consciousness."

Diabetes mellitus continues to occupy a unique position in the field of medicine in that it is one of the few disorders which may have its onset at any age—from the toddling babe to the octogenarian—and though the abnormal physiology is comparable regardless of age, the clinical picture and response to therapy will vary greatly.

Perhaps the best classification of diabetes has come about in very recent years in which two types are described:

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The Juvenile or Childhood Type of Diabetes, characterized by symptomatic and rather rapid onset of polyuria, polydipsia, weight loss in spite of normal to excessive appetite, general apathy and lethargy, and tending without treatment to progress to ketosis, coma, and death. Under the best of control it tends to be insulin resistant, erratic in behavior, and requires meticulous discipline on the part of the patient in the application of diet and insulin therapy. Oddly enough, some adults in all age groups may have this type of diabetes.

Adult Type of Diabetes, usually having an insidious onset after age forty, often without demonstrable symptoms, and discovered accidentally by glycosuria supported by abnormal blood sugars. It is clinically characterized, usually, by ease of control, the absence of ketonemia and ketosis, is found most often in the overweight individual with a history of diabetes in his heredity, and represents the majority of diabetic patients seen.

It is to be emphasized that one either has diabetes or he does not, and it is imperative that both types of diabetes be diagnosed at the earliest possible moment and placed under the best practical control or, inevitably, deterioration of the patient will take place, usually within the second decade of the existence of the disorder. The so called "severity of the diabetes" usually means its ease or resistance to control methods, and does not influence the tendency toward arterial deterioration if such control is not accomplished as early as possible and maintained at a favorable level. Though the actual reason is not known on a pathogenic basis, late diagnosis and poor control lead to arterial

damage throughout the body, affecting all organs, and resulting clinically in premature nephritis, known as capillary glomerulonephrosis, described by Kimmelstiel-Wilson, coronary heart disease, premature cerebral vascular accidents, partial to complete blindness, loss of limbs or a portion thereof, and a variety of neuropathies. Without treatment, the diabetic child will usually deteriorate and die in ketosis within six to nine months, and the older individual will proceed to "precocious senility" and have his life cut short by the above afflictions.

The diagnosis of diabetes represents no real problem in most instances. The physician must ever be on the alert inasmuch as many as three percent of the population has this disorder, its incidence increasing with advancing years, particularly in those with unfavorable heredity and those who have become overweight. In youth, a simple urine specimen taken one hour after a sizable meal and then confirmed by blood sugar determinations, is usually adequate for diagnostic study. However, in the older individual, a blood sugar taken one hour after a meal may be necessary, the usual morning urine specimen, or any urine specimen, not being satisfactory for diagnosis. It may be categorically stated that any individual who has a fasting blood sugar properly done by the Folin-Wu method with results in excess of 120 mgm.%, or whose blood sugar does not return to this level within two hours after eating a good meal or after having consumed 100 grams of glucose, has diabetes. It is rarely necessary to do the complicated and expensive glucose tolerance test except in those patients whose fasting blood sugars are normal, but who tend

to have transient glycosuria postprandially.

The physician does not actually treat diabetes. It is his responsibility to make the diagnosis, to understand the nature of treatment and, furthermore, to understand the peculiarly perverse personalities of those whose lives must be regulated on into the indefinite future. He must develop techniques of impressing upon the diabetic patient the importance of following disciplines and rules. He must tell the patient that life may go on almost as usual, but not quite, and he must teach this patient to treat himself properly under his periodic and long-term guidance.

Fortunately for the diabetic patient at the present time, though there is no known cure for this disorder, there are three rather effective methods of control or treatment, namely: (1) Diet alone; (2) Diet and oral medication—the sulfonylureas and (3) Diet and insulin. Though it is somewhat difficult to arbitrarily establish rules that will guide the physician in the type of treatment which will be applicable to the given patient, such rules may be outlined with a fair degree of accuracy, thus preventing useless delay in effective treatment. Obviously, the experience and judgment of the physician may alter the application of these rules. There follows, however, suggested criteria for selecting the appropriate method of treatment for the patient who has been discovered to be diabetic.

Diet Alone The following group of patients may be able to achieve adequate control of their disorder by diet alone:

1. Mild diabetic whose condition is diagnosed early, usually over age of forty.

2. Diabetics who are grossly overweight and are willing to reduce to normal by restricting their intake of food. This often modifies and sometimes reverses the diabetic state temporarily, or even permanently.
3. Diabetics, either normal in weight or excessively heavy, who have been abnormal carbohydrate eaters and are willing to reduce this element in their diet drastically, or divide its intake into several meals a day. The analysis of a "What I Eat" chart will indicate the total amount of carbohydrate consumed by the patient under ordinary circumstances.
4. Mild diabetics, diagnosed early, who are well controlled on diet and relatively small amounts of insulin may, in some instances, find their conditions so improved that insulin may be discontinued, with diet alone representing the main feature of treatment.
5. From a laboratory standpoint, the group of patients who have only moderately elevated blood sugars, not to exceed a fasting state 180 mgm.%, and whose glycosuria is transient and usually found postprandially.

The juvenile type of diabetes can never be controlled without the aid of insulin. Those patients fortunate enough to control the disorder (that is, to maintain relatively normal blood sugars with a minimum of glycosuria) by diet alone should be placed on a formal diet, allocating the proper number of calories and the maximum carbohydrate, preferably distributed into three major meals with, perhaps, an afternoon and bedtime snack. It is un-

TABLE I:
TIMING OF CURRENTLY USED INSULINS

INSULIN	EFFECT NOTED	PEAK OF EFFECT	DURATION OF EFFECT
Regular	30 minutes	1-2 hours	4-5 hours
PZI	3-5 hours	10 hours	24-36 hours
NPH	30 minutes	8-10 hours	24-30 hours
Lente	Approximately the same as NPH		
Globin	2-3 hours	8 hours	16-18 hours

wise to generalize on the diabetic diet, such as to simply indicate that "you may eat anything you wish except sweets". All patients should be on a formal diet.

Diet Plus Oral Medication In the past, the patient who could not be controlled by diet alone was placed on diet and insulin. Now, however, there is an intermediate treatment involving the use of sulfonylureas, the one now commercially available being known as Orinase®, produced by The Upjohn Company in a 0.5 gram tablet or capsule. The product, Carbutamide or BZ-55, developed by Eli Lilly and Company, though extremely effective, was withdrawn from the market because of a relatively high percentage of toxic effects. Orinase, used in thousands of patients over a number of years, though not as effective as Carbutamide, has relatively minimal toxicity. If these effects do occur, they are principally gastrointestinal disorders, headache, variable allergic skin manifestations, and alcohol intolerance, all of which disappear on the withdrawal of the drug. Occasionally, leukopenia of mild degree has been noted and has often been reversible even when the drug is continued; however, it is wise to do a white blood count periodically when the drug is used. All in all, however, the drug ap-

pears to be effective in selected patients and can be used without misgivings on the part of the physician as to serious toxic effects.

The patients to whom this treatment appears to be applicable may be selected by adhering to the following rules:

1. The adult type of diabetes which has taken its onset after age forty
2. Diabetes of recent origin
3. Diabetics in whom no blood sugar above 300 mgm. % (Folin-Wu) has been found
4. Diabetics who have never been in ketosis nor manifested ketonuria.
5. Diabetics who, if on insulin have not been obligated to take over 30 units daily to compensate for an adequate diet
6. Obese diabetics willing to reduce on a limited food intake

It is to be emphasized that there is no positive way to select the patient who may be controlled by this method. The physician simply selects a patient whose diabetes falls into the above groupings and under careful observation tries from one to four weeks to see whether or not such treatment is applicable.

If the patient has been on insulin, it is acceptable to withdraw insulin immediately and institute dosage of Orinase, or some recommend that insulin be withdrawn gradually over a period of approximately one week. The recommended dose of Orinase in either instance would be six 0.5 gram tablets the first day and an average of three tablets, taken one before each meal, thereafter. Occasionally, patients' blood sugars may be maintained at a normal level on two tablets a day; in other instances, four tablets a day may be required, to be taken two tablets be-

fore breakfast and two tablets before supper.

These patients, too, should be placed on a formal diet, calculated and distributed according to the patient's needs with, perhaps, a maximum of 250 grams of carbohydrate a day. During the institution of this form of therapy, the patient should be instructed to do urine tests for sugar by an approved method, three or four times a day, usually before meals and at bedtime. Response to this method of treatment, if such is to be attained, comes within a period of one to four weeks. Blood sugars, thereafter, should be done periodically to determine whether or not adequate control is being maintained.

The childhood type of diabetes, regardless of age, will not respond to Orinase and there appears to be no advantage in combining Orinase with the use of insulin in an effort to make the patient more sensitive to the latter. If, even though the rules are followed, the patient does not respond to Orinase, treatment should be established with diet and insulin. A patient adequately controlled on diet and Orinase may, under the influence of stress, such as infections, surgery, or accident, need to be temporarily cared for with insulin therapy.

Diet and Insulin All cases of so called "childhood diabetes", regardless of age, all more resistant or severe types of adult diabetes, and all patients who do not, in general, fall into the classifications listed above should be treated by the tried and proven method of diet and insulin. Regarding diet, it is to be remembered that a state of diabetes in no way alters the individual's need for food. Every diet should be formalized, preferably by a dietitian, and should be that

diet which is designed to either attain or maintain normal weight in a given individual. The diet should be adequate in calories, liberal in protein, can include variably carbohydrates up to a maximum of 250 grams per day, with a fat as a caloric filler. The distribution of the diet depends on the insulin of choice.

The choice of insulin is very important and one must understand the nature of the diabetes and the "timing" of the insulin, which involves the time of onset of absorption, the time of peak absorption, and the duration of absorption. Though there is some difference of opinion, in general, the available insulins have approximately the timing shown in Table I.

The choice of insulin depends, again, on some knowledge of timing of the insulin and, also, on the nature and type of the diabetes and the rules shown in Table II may be helpful in selecting the most appropriate insulin.

Most diabetic patients may achieve control on an ambulatory basis, with the facilities of a doctor's office sufficing. Rarely is it necessary to hospitalize the patient except in conditions of acute emergency. The aid of a consulting dietitian is extremely desirable. It is the physician's responsibility to create the diet formula, but few of them are well enough informed to present the breakdown of the diet, usually utilizing the presently accepted "exchange system", to the patient.

The control of the diabetic takes time, and usually the metabolic stabilization will not be achieved in less than four to six weeks. The sequence of treatment is suggested in Table III.

It is desirable, if possible, to control the diabetic patient on one injection of

TABLE II: Choice of Insulin

1. Unmodified (Regular) Insulin in acidosis and coma where rapid absorption is essential; during infections when glucose tolerance is decreased; as a supplement to longer acting insulins.
2. Protamine Zinc Insulin (PZI) in mild to moderately severe diabetics whose daily insulin need does not exceed 40 units; in physically active patients; in older diabetics.
3. Globin Insulin in mild diabetics who are capable of producing relatively normal fasting blood sugars but are glycosuric after meals, and whose insulin need does not exceed 30 units a day.
4. NPH Insulin in young diabetics; severe diabetics regardless of the dosage needed.
5. Lente (70-30) Insulin in approximately same indications as NPH, perhaps a little smoother in absorption.

TABLE III: Sequence of Treatment

1. The patient is placed on an appropriate diet and such diet is well explained by a well informed dietitian.
2. The patient is instructed to check a urine specimen by one of the approved methods before each meal and at bedtime, and chart the results.
3. The patient is placed on an appropriate morning dosage of long-acting insulin, usually such dosage being considered by the physician to be inadequate, and the patient is instructed to increase this dosage every two or three days by two to four units until urine specimens, taken at the above mentioned times, begin to show two or three negatives out of the four per day. Often times the insulin dosage required at the onset may be in excess of that needed as a maintenance dose, and it may be necessary to create some reduction when specimens become negative.

long-acting insulin in the morning. The patient must learn, in general, the "timing" of his insulin and from experience learn to distribute his food in keeping with the absorption of his insulin. Though individualizations may be necessary, in general, food should be distributed as shown in Table IV, so that the absorption of food may roughly parallel the absorption of the insulin.

The patient should be taught to make every diabetic day look as good as possible, and if for some reason the long-acting insulin of the morning does not produce a good day, he should be taught to give a supplement of Regular insulin, usually a dosage of six to ten units, with either the morning dose of insulin or before supper in the evening. (Regular insulin may be added to NPH and Lente insulins and stand up as such—not with

Protamine, an additional, separate injection being necessary.) The diabetic patient should be seen by his physician at regular intervals, bring a chart of urine specimens, and have blood sugars done. Rarely can a patient do well over a

TABLE IV: Distribution of The Diet to Accommodate Modified Insulins

INSULIN	BREAK-FAST		AFTERNOON		BEDTIME	
	LUNCH	SNACK	SUPPER	SNACK		
NPH	1/5	2/5	Yes	2/5	?	Yes
Lente	1/5	2/5	Yes	2/5	?	Yes
Protamine	1/5	2/5			2/5	Yes
Globin	1/3	1/3	Yes	1/3		

The average bedtime snack should be approximately P-10, CHO-20, F-10, and the afternoon snack may be a fruit exchange. These are to be subtracted from the daily total before the meals are distributed.

TABLE V: Stages of Ketosis

1. Pre-clinical phase, in which the only manifestation is the presence of ketone bodies in the urine specimen which reflects, of course, the increase of these poisonous substances in the blood stream. Ketonuria may be present with heavy glycosuria, or may be present without sugar in the urine if the food intake has been inadequate or vomiting has been present. This stage may be transient or may be semi-chronic; it basically asymptomatic and may be picked up only by tests for ketone bodies in the urine specimen.
2. Clinical ketosis, manifested by glycosuria, ketonuria, with gradually progressing symptoms of polydipsia, polyuria, later abdominal cramping and vomiting, and an objective appearance of dehydration and apathy.
3. Ketosis with stupor, progressing to actual coma, with the appearance of the patient in this instance being characteristic: there being present so called "Kussmaul" breathing, soft eyeballs, flushed face, dehydration, characteristic odor of acetone on the breath, and a state of confused consciousness, varying from stupor to complete coma. A patient in the latter stage of ketosis should be

placed in the hospital, and energetic treatment with fluids and often times massive doses of insulin instituted. Such patients, in the large majority of instances, should be salvaged.

TABLE VI: Causes of Ketosis

1. Undiagnosed diabetes, particularly in infants and youth, in which either the patient has not been alerted to the preceding classic symptoms of diabetes, or the physician has failed to detect the presence of glycosuria on examination.
2. Poorly controlled diabetes:
 - (1) Inadequate insulin dosage
 - (2) Over-eating
3. Situations of stress:
 - (1) Acute infections
 - (2) Trauma
 - (3) During and following surgery
 - (4) Pregnancy—usually in the vomiting of the first trimester or during and following delivery.
 - (5) Profound emotional upsets
4. Starvation and/or dehydration:
 - (1) Inadequate diet
 - (2) Vomiting and/or diarrhea

period of time without the moral and practical support of his physician.

The acute complication in diabetes is ketosis, which without adequate treatment will lead to coma and death; this is an entirely preventable disaster. This problem arises only in the juvenile type of diabetes, which type, however, it has been pointed out before, can occur in any age group, and patients with diabetes of this severity should be instructed to do a test for ketone bodies in the urine once daily and to be alerted if such becomes positive. It is consoling to re-

member that diabetic ketosis does not come on quickly, but rather over a period of twenty-four to thirty-six hours, or more, and is reversible until its very last phase. The stages of ketosis may be defined as shown in Table V, and all severe diabetic patients should recognize these symptoms.

Patients should be well instructed in the care and treatment of their own diabetes, and those erratic or brittle type patients, in whom ketosis is likely to occur, should be instructed as to the circumstances under which this death-

dealing complication may intervene. They may be listed under the headings shown in Table VI.

At the present state of knowledge, the cause of diabetes is unknown. It is considered to be an incurable disorder, but may be controlled or arrested by the methods described above. Absolute and perfect control is probably not possible, but it is well recognized by authorities that the best odds for the prevention of complications and a reasonably normal survival in life can only be given those who are willing to follow the rules as carefully as possible. A tremendous amount of research is now in progress, and younger diabetic patients may be given the hope and promise that more satisfactory methods of treatment may

come within their lifetime.

Addendum Coincident with the proof reading of this article, two new oral hypoglycemic agents are being introduced and are worthy of mention:

Chlorpropamide (Diabinese-Pfizer), is available for use on private patients. Reports suggest the same indications as for Orinase; a smaller dosage; possible greater toxicity, including jaundice—an evidence of individual sensitivity with recovery on discontinuance of the drug. It shows promise as an additional anti-diabetic agent.

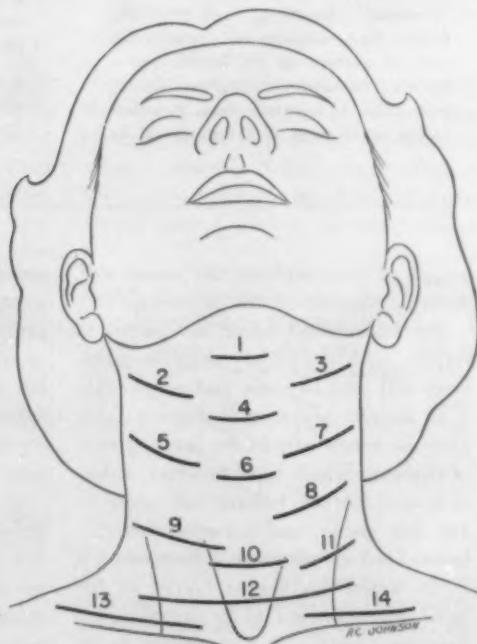
Metahexamide, Compound No. 29880, (Lilly), is being used on experimental level by capable observers and has not yet been released on the market.

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Clini-Clipping

INCISIONS OF THE NECK

1. Drainage of Submental Abscess
2. Drainage of the Cervical Abscess at Angle of Jaw
3. Excision of Congenital Sinus — Partial Mobilization Here and Lower Segment at (II)
4. Excision of Thyroglossal Cyst or Sinus
5. Exposure of Internal or External Carotid Arteries
6. Cricothyreotomy
7. Excision of Carotid Tumor or Bronchial Cleft Cyst
8. Diverticulum of Esophagus
9. Exposure of Common Carotid Artery
10. Tracheostomy
11. Thyroidectomy
12. Exposure Brachial Plexus or Subclavian Artery
13. Scalenotomy or Phrenic Nerve Interruption



MEDICAL TIMES

*Review of the Literature and Report
of a Case Managed by Repeated Phlebotomy*

Iron Metabolism and Hemochromatosis

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The present discussion is an interim report of a patient who has proven idiopathic hemochromatosis and who is currently being treated by repeated phlebotomy. Since a number of patients treated successfully in this manner are gradually being reported in the literature, we felt it might be of some interest to add our patient to this group. In addition, a rather complete review of the metabolism of iron has been included, since any consideration of the etiology, pathogenesis, clinical findings and treatment of hemochromatosis must be based upon an adequate understanding of the mechanisms involved in the absorption, transport, storage and excretion of iron.^{1,2,3,4}

Absorption of Iron The average adult intake of iron amounts to 1.0 to 15.0 mg. per day, of which about ten percent is usually absorbed under normal conditions. Ingested iron, which is in the form of ferric hydroxide and organic iron compounds, is reduced in

the stomach to ferrous iron by the action of gastric hydrochloric acid and various reducing agents. Ferrous iron is relatively soluble, and is the only form in which iron is absorbed into the gut; absorption is a one-way process: once iron has entered the mucosal cell of the intestine, it cannot return to the lumen; that is, there is no intestinal secretion of iron.

Part of the ferrous iron absorbed passes directly into the blood stream unchanged, but the majority is oxidized to ferric hydroxide which combines with apoferritin, a protein formed in the intestinal mucosa (especially the duodenum), in response to the presence of absorbed iron, to form ferritin. Ferritin is in equilibrium with the ferrous iron of the mucosal cell, so that when the former is saturated with iron, no more iron can enter the cell from the lumen of the intestine ("mucosal block"),

until a state of relative desaturation is obtained by absorption of iron into the circulation. The latter is in general governed by the body needs for iron.

At the blood stream end of the mucosal cell, the ferric iron of ferritin is reduced to ferrous iron by the reducing mechanisms of the cell. Since iron can be absorbed into the blood only in the ferrous form, the capacity of the cell to reduce the ferric iron of ferritin to ferrous iron (the "redox level" of the cell) becomes an important factor governing the rate of iron absorption. It is postulated that low oxygen tension in the mucosal cell, such as would obtain in the anemias, favors reduction, resulting in increased iron absorption. Ferrous iron released in this manner enters the circulation and is auto-oxidized to ferric iron, which is then bound by the plasma protein.

Of all the factors favoring increased iron absorption, the most common is iron depletion secondary to iron deficiency anemia. As mentioned, the stimulus for increased iron absorption in this instance is a lowered oxygen tension in the intestinal mucosa, resulting in increased absorption up to fifty percent efficiency. Hemoglobin reduction without tissue iron depletion, as in pernicious anemia, aplastic anemia or the anemia of pyridoxine deficiency, also results in increased iron absorption. Other causes of increased iron absorption include growth, pregnancy, low phosphorus diet, hemochromatosis, and a high iron intake. With regard to the latter, it is generally true that the more iron ingested, the more is absorbed; the limits of absorption in humans have not been tested, but amounts up to eight grams have been retained in a period of a few weeks.

In contrast to iron deficiency anemia, the anemia of chronic infection is not associated with increased iron absorption. Achlorhydria results in decreased iron absorption only when the iron requirement is high; a high calcium intake interferes with iron absorption markedly, probably because iron is adsorbed on calcium precipitates.

Iron Transport Iron is normally carried in the serum exclusively in combination with a protein, siderophilin (transferrin), a beta-1-globulin.^{1,2,3,4} Usually siderophilin, which has the capacity to bind two ferric ions per molecule, is only one-third saturated with iron; thus while the serum iron level (SeFe) is reported as ranging from 50 to 185 micrograms percent, when the serum is saturated with iron, the levels range from two hundred fifty to three hundred and eighty-five micrograms percent. The latent or unsaturated iron-binding capacity of the serum represents that portion of the siderophilin that is not already bound to iron. The total iron-binding capacity (TIBC) is the iron of the Fe-siderophilin combination plus the iron that can saturate the remaining siderophilin. The percent saturation (SeFe/TIBC) normally ranges from twenty-eight to fifty-eight percent.

When excess iron is given by mouth or intravenously⁵ (ten mgs. of ionized iron i.v.), the serum level will usually not rise much beyond three hundred and fifty micrograms percent, which is the total iron-binding capacity of the plasma. However, if easily dissociated iron compounds are injected in amounts to exceed the carrying capacity of the plasma, the tissues are flooded with ionic iron and toxic symptoms may result (sneezing, coughing, flushing, nausea and

occasionally vomiting). On the other hand, poorly dissociated or colloidal iron preparations, may be injected safely in much larger amounts.

The present concept of iron transport and delivery to the tissues includes an equilibrium in the plasma between ionized iron, iron-free transferrin and Fe-transferrin. The ionized iron of the plasma, through simple diffusion, is in equilibrium with the ionized iron of the extracellular fluid. Only iron ions leave the blood stream. When blood passes organs where the synthesis of iron-containing substances is going on, or where the reaction is acid, the Fe-transferrin combination dissociates to release ferric ions. In this way iron transport and delivery is carried out.

A variety of factors may influence the serum iron level; for example, increased serum iron values are noted when hemoglobin synthesis is depressed as in pernicious anemia in relapse, hypoplastic anemias, and the anemia of pyridoxine deficiency. In these conditions there are ample supplies of iron, but red cells are not being made for other reasons. It has been noted that when the bone marrow is inactive, as in aplastic anemia, the time for half an injected dose of radio-active iron to disappear from the blood stream ($T_{1/2}$), is markedly prolonged. Normally the $T_{1/2}$ is one hundred minutes, and in aplastic anemias it was found to be two hundred and fifty minutes. Increasing the oxygen tension by inhalation of fifty percent oxygen will suppress erythropoiesis and lengthen the $T_{1/2}$ also. In other words, in conditions of bone marrow inactivity, iron is picked up from the serum at a much slower rate than normal.

The serum iron is also elevated in

those conditions where the iron stores of the body are overfilled, as in hemochromatosis, transfusional hemosiderosis, or iron loading by intravenous injection. The $T_{1/2}$ of injected radioactive iron has been found to be prolonged in hemosiderosis. High serum iron levels are also noted when iron is released into the plasma, either from increased red cell breakdown in the hemolytic anemias, or in acute hepatitis where the damaged liver cells release stored iron and are unable to store ingested iron.

In contrast, decreased serum iron levels are noted when there is increased hemopoietic activity with resulting increased utilization of iron, as in polycythemia or pernicious anemia in remission. In polycythemia, with an active bone marrow, the $T_{1/2}$ of injected radioactive iron is markedly decreased to eleven to thirty minutes. The $T_{1/2}$ can also be lowered by decreasing the oxygen tension of inspired air, which results in increased marrow activity. Depleted iron stores, as in iron deficiency anemia, blood loss, growth and the latter half of pregnancy all result in a low serum iron level. The anemia of infection is associated with a diminished serum iron value, probably because there is increased absorption of iron by the tissues.⁷ An intravenous injection of iron in patients with this type of anemia does not raise the iron level as much as in normals, and the rate of disappearance of iron from the plasma following injection is twice that seen in normal subjects. This suggests that iron is removed from the blood at an abnormally high rate by the reticulo-endothelial system and is not used by the marrow. In fact there is some evidence that removal of iron by the reticulo-endothelial cells is under

adrenocortical and autonomic control.

Iron Storage Iron is stored in the body as ferritin and hemosiderin.^{1,2,3,4} Ferritin is a partially crystallizable compound made up of a protein, apoferritin, and iron, which is combined with it to the extent of seventeen to twenty-three percent; iron is normally stored in the spleen, liver and bone marrow as ferritin. The iron of ferritin is in the form of minute ferric hydroxide micelles or clusters which are attached to the surface of the apoferritin molecule, and therefore present a relatively large surface area; iron is thus readily brought into solution by the reducing processes of the cells. Ferritin is not microscopically visible since it is too diffuse in the cells. For practical purposes apoferritin does not occur outside of its combination with iron, but when iron is brought into certain locations (as liver, spleen, bone marrow or intestinal mucosa) in sufficient concentrations, it apparently can be quickly synthesized, increasing in proportion to the presence of iron and disappearing when iron concentration in the tissue falls.

However, if iron enters into a tissue at a rate exceeding the capacity of apoferritin synthesis, or if a tissue is already saturated with ferritin, the excess iron is stored as hemosiderin. Hemosiderin is a granular substance which contains clusters of iron hydroxide units mixed with some protein material. Since these granules are large enough to be microscopically visible, iron in this form is less readily available than that of ferritin.

Storage iron⁵ represents the iron in the tissues that is utilized for hemoglobin formation when needed, and amounts to six hundred to twelve hundred mgs. Part of this (about ninety

to one hundred mgs.) is a labile pool of iron into which recently acquired iron (from destruction of red cells or ingestion) enters, and from which it is withdrawn for current use, since newly acquired iron tends to be used before older stored iron. The iron of the labile pool, therefore, is in equilibrium with the serum iron on the one hand, and with the stored iron on the other hand. The chief organ involved in the maintenance of the serum iron is probably the liver.

At any one time the total serum iron of a normal male amounts to four milligrams. Twenty-seven milligrams of iron leave the blood stream each day; about seventy-five percent (twenty milligrams) is taken up by the bone marrow to be used for daily hemoglobin synthesis, and the excess is stored primarily in the liver. Of the twenty-seven milligrams entering the blood stream daily, twenty milligrams come from the catabolism of red cells and the remainder is derived principally from the labile pool with a few percent coming from ingested iron. Although it is known that diminished oxygen tension is associated with movement of iron out of the intestinal mucosa, it is not clear whether lowered oxygen tension will also result in increased liberation of iron from the tissues, or whether raising the oxygen tension will have the reverse effect.

There seems to be a rather constant relationship between the state of the iron stores and iron absorption and utilization, so that when the iron stores are overfilled, iron for new hemoglobin formation is derived from the stores, rather than from current hemoglobin breakdown as is the usual case. On the other hand, when iron stores are depleted, the utilization of storage iron is

depressed, and the body relies to a large degree on absorbed iron for its metabolic needs.

Iron Excretion Excretory losses of iron in man are virtually negligible; about 0.5 mg. is lost in the urine per day, and 0.1 to 0.2 mg. per day is lost in sloughing from the skin.^{1,2} This amounts to a total iron excretion of about one milligram daily.

The average menstrual loss is thirty-five cc. of blood, which amounts to about seventeen milligrams of iron; since the drain of iron from the maternal stores to the fetus averages three hundred and fifty mgs., it is understandable why some degree of iron lack is common in women.

Hemochromatosis Hemochromatosis^{3,4} is a disease characterized by extensive deposition of hemosiderin granules in the liver, pancreas and skin, and less so in the bone marrow and spleen. There is concomitant fibrosis and eventual functional impairment of the involved tissues, resulting in the clinical triad of cirrhosis of the liver, diabetes mellitus, and bronzing of the skin. In patients with hemochromatosis, the tissues contain twenty-five to fifty grams of iron compared with the normal total of three to five grams of iron. In women, during the thirty years of reproductive life the average loss of iron through menstruation and pregnancy is ten to fifteen grams; this loss may be enough to account for the less frequent appearance of the disease in women, and for the fact that when this condition does present in the female, it is almost always after the menopause.

Iron storage diseases may be classified into four main groups:¹⁰ primary or idiopathic hemochromatosis, secondary hemochromatosis, exogenous hemo-

chromatosis, and hemosiderosis. The majority of instances of hemochromatosis fall into the first category of primary hemochromatosis. In this group there is no significant degree of anemia and in the advanced stages of the disease the majority have skin pigmentation and diabetes mellitus as well as cirrhosis. It is postulated that in the idiopathic variety the intestinal mucosal cell has a greater reducing tendency, resulting in increased iron absorption and deposition. In fact radioactive studies^{11,12} have demonstrated increased absorption of orally administered doses of iron; whereas normally 1.5 to 4.4 percent of a dose was absorbed, two patients with hemochromatosis absorbed twenty to forty-five percent of an orally administered dose of radioactive iron. It seems likely that with the increased iron absorption, subsequent deposition in the liver and pancreas becomes so great as to cause death of parenchymal cells, leading to connective tissue overgrowth and resultant cirrhosis and diabetes.

Secondary hemochromatosis includes a small group of patients who have severe chronic anemia, usually of the aplastic, hypoplastic, refractory or hemolytic type. All of these individuals have received transfusions, but not in sufficient number to account for the stores of iron found in the tissues; one hundred blood transfusions, each containing two hundred and fifty milligrams of iron, would be required to account for the iron found in most cases of hemochromatosis. Probably the anemia in these patients results in increased absorption of dietary or orally administered iron which is not utilized to form hemoglobin, but rather is diverted to the iron storage centers, such

as the liver, and later the pancreas and skin, producing the clinical picture of hemochromatosis.

On the other hand, patients with exogenous hemochromatosis have received more than one hundred transfusions, in most instances because of aplastic, refractory or hemolytic anemia, although part of the total iron in these individuals may also come from increased absorption. In contrast to the above, patients with hemosiderosis have received multiple transfusions, and do show extensive deposition of iron in the liver and spleen and occasionally have some pigmentation of the skin, and may even have diabetes, but they do not have cirrhosis of the liver.

Turning now to the clinical features of hemochromatosis^{3,4,12,14} the exact incidence of the idiopathic form is unknown, but it is generally considered to be a rare disease; there is a strong predilection (20:1) for males, and the maximum incidence occur between the ages of forty-five and fifty-five years. Although the reported incidence of cases with a familial origin is rare, it is clear that hemochromatosis may at times be congenital in nature.

There are five principal clinical features of the disease, one or more of which may be absent: hepatic enlargement produced by hypertrophic cirrhosis, bronzing of the skin, diabetes mellitus, hypogonadism and hypersideremia. Quite often both the cirrhosis and diabetes are mild in degree; clinical jaundice may be absent, and the bromsulphthalein test is normal. The bronze pigmentation of the skin which usually has in addition a peculiar slate blue hue, is not always present.

The diagnosis may be confirmed by noting the abnormal iron deposits in

biopsies of the skin, liver or bone marrow, examination of the urinary sediment for intracellular hemosiderin, injection of acidified potassium ferrocyanide intradermally, resulting in a deep blue color, or by finding a high serum iron content with elevated percent saturation. The average serum iron in hemochromatosis^{3,5} is two hundred and thirteen micrograms percent (ranging from one hundred and twenty to two hundred and ninety-seven micrograms percent); percent saturation of the serum with iron varies from sixty-five to ninety-four percent.

The prognosis in primary hemochromatosis is difficult to evaluate. Although the average length of life following diagnosis has been estimated to be eighteen and a half months, there are reports of patients living up to fourteen years after the diagnosis was made. Some of the causes of death in this disease are cirrhosis (eleven percent), tuberculosis (nine percent), and carcinoma of the liver (seven percent). In this connection, the incidence of primary carcinoma of the liver in hemochromatosis is 18.9 percent, as compared with an incidence of 4.4 percent in Laennec's cirrhosis.

Treatment of this disorder is directed toward management of the diabetes and cirrhosis. Efforts to increase the excretion of iron by intravenous injection of EDTA (ethylenediamine tetra-acetic acid), an organic compound capable of forming a strong non-ionic water soluble union with iron, have augmented urinary excretion of iron threefold; but this, of course, is negligible.¹⁰ Currently, repeated phlebotomy appears to be the only practical method for removing the excess stores and controlling the tendency for increased iron

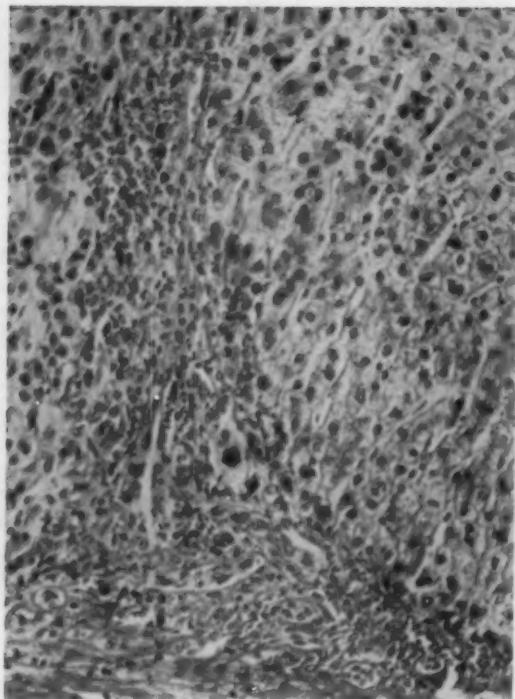


Figure 1. Biopsy of liver showing cirrhosis. There is round cell infiltration, bile duct proliferation and some increase in fibrous tissue in the portal area. $\times 100$.

absorption and deposition.^{17,18,19,20,21} Weekly to bimonthly five hundred cc. phlebotomies over a one to four year period have resulted in marked clinical and laboratory improvement in a number of reported cases. These patients tolerate phlebotomy remarkably well without developing any significant degree of anemia; by way of explanation it is suggested that the rate of blood regeneration after phlebotomy depends chiefly upon available body stores of iron, which are so abundant in these patients that anemia is prevented.

Case Report

W.C.B., a fifty-one year-old white male electrician, was found to have far

advanced pulmonary tuberculosis following investigation for symptoms of cough, anorexia, weakness and hemoptysis. Sputum was positive for acid fast bacilli by smear and culture, and the patient was hospitalized in April 1953.

Diabetes mellitus, always easily controlled with moderate amounts of insulin, had been present for ten years; otherwise past medical history was unremarkable, and the alcoholic intake had never been excessive. His family history revealed that his mother, who died at the age of fifty-six years, had had diabetes but no known liver disease; the father died at age eighty-seven years of liver disease (unspecified), but was not an alcoholic, and did not have diabetes. The patient had five brothers, one of whom was described as having dark skin, liver disease (unspecified) and diabetes; of six sisters, two had diabetes but none had any known liver disease.

Physical examination on admission showed the skin to be somewhat dark in color. The liver edge was palpable three finger breadths below the right costal margin, hard in consistency and non-tender; the spleen was felt two finger breadths below the left costal margin. Moderate atrophy of the testicles was noted. In June 1953, an exploratory laparotomy was performed for the purpose of liver biopsy, which on microscopic examination showed cirrhosis of the liver with hemochromatosis (Figures 1 and 2).

The patient was placed on a regimen of streptomycin and sodium PAS therapy, which was later changed to dihydrostreptomycin, and finally to isoniazid and sodium PAS because of toxicity. His recovery from tuberculosis was complicated by a right partial pneumothorax

and pleural effusion, and tuberculosis enteritis, but in spite of this the clinical course was very favorable and the patient was discharged with persistently negative sputum and stable chest roentgenograms in September 1954, after eighteen months of combined drug therapy.

In June 1953, while still in the hospital, an episode of hematemesis and melena prompted investigation of the upper gastro-intestinal tract which revealed probable small esophageal varices. Liver function studies performed on this patient are summarized in Table I; it will be noted that in July 1954 the BSP test suggested deterioration of liver function; because of this, a program of repeated phlebotomies was begun, so that in the period from July 1954 to August 1955 a total of thirty-one pints of whole blood were removed.

Since discharge in September 1954 the patient has been followed at the Hartford Hospital on an out-patient basis, adhering to a program of diet, insulin, and repeated venesecti ons. His clinical course has been satisfactory, and the BSP test which showed 17.2 percent retention in September 1954 had fallen to a value of five percent by August 1955; the cephalin flocculation also gradually returned to normal.

Discussion

The diagnosis of hemochromatosis seems well established in this patient since both the typical clinical features and microscopic picture in liver biopsy are present.

In addition, serum iron studies were done, using our own modification of the method described by

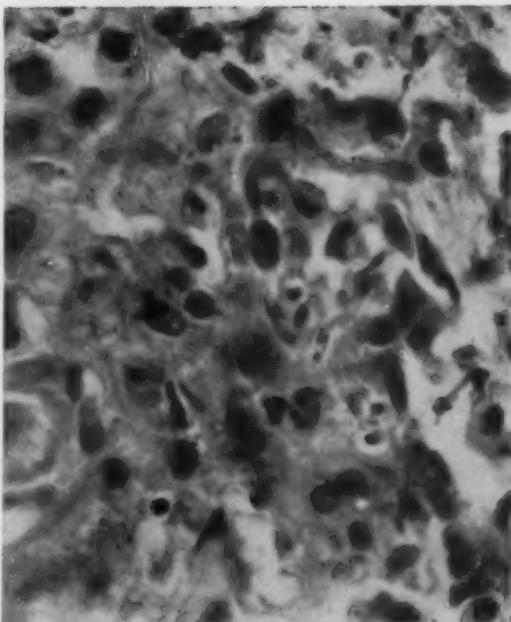


Figure 2. This view illustrates hemosiderin granules, found chiefly in the reticuloendothelial cells x 430.

Walker.²² Normal serum iron values in males by this method ranged from fifty-five to one hundred and eighty-five micrograms percent, with a mean value of one hundred and sixteen micrograms percent; percent saturation was calculated by the formula SeFe/TIBC as described previously. The TIBC represented the sum of the serum iron value and the unsaturated iron-binding capacity of the serum; the latter was determined by the method described by Cartwright and Wintrobe.⁷ Using this technique, normal percent saturation varied from twenty to forty-five percent. In our patient the serum iron was two hundred and seventy-four and three hundred micrograms percent on two occasions, with percent saturation values of 84.5 and 100 percent respectively. As noted, these findings are characteristic of hemochromatosis. Also, since

TABLE I

DATE	1953 JUNE	1954 NOV. MARCH	JULY	SEPT.	1955 JAN.	JUNE	AUG.
Serum albumin (Gm. %)	2.56	3.97	3.55	3.10	4.19	4.90	4.90
Serum globulin (Gm. %)	3.77	2.00	1.91	2.52	2.14	2.30	2.60
Serum bilirubin (mg. %)	0.7	0.9	0.7	0.7	0.6	1.1	0.8
Cephalin flocculation ..	0/0	1+/1+	0/0	2+/-3+	1+/-2+	0/0	0/0
Alkaline phosphatase (Bodansky u.)	1.7	3.8	2.7	5.2		3.5	6.3
BSP (% retention in 45 min.)			5%	13.8%	17.2%	12.0%	5% 5%
Number of phlebotomies				3	4 5	4 10	5

this patient has never had anemia and has no history of frequent transfusions, other forms of iron storage disease seem to be excluded adequately.

Of some interest is the family history of a brother with diabetes, some form of liver disease and dark skin. Unfortunately we have been unable to examine the brother, but the suspicion remains that he may also have hemochromatosis, which on occasion may have a familial incidence. Also noteworthy is the occurrence of tuberculosis in our patient, since an increased incidence of tuberculosis has been reported in hemochromatosis.

From the studies available thus far, it would appear that repeated phlebotomy has affected the patient's liver function favorably, at least as measured by the BSP and cephalin flocculation tests. We have been most interested to note that in spite of frequent phlebotomies, the serum albumin has remained at a very satisfactory level, so that parenteral plasma protein replacement has not been necessary. Also, as is so characteristic of patients with hemochromatosis, the massive blood loss has not resulted in any significant degree of anemia; hematocrit determinations at the time of each phlebotomy have ranged from thirty-nine to forty-

six percent, averaging about forty-two percent; blood hemoglobin in June 1955 was thirteen grams. Because of the above observations we have felt that repeated phlebotomy was justified in spite of the recently healed pulmonary tuberculosis. At the present time (February 1958) the patient remains perfectly well with completely normal liver function studies. He has not required phlebotomy for over one year.

Summary

The mechanisms of iron absorption, transport, storage and excretion have been reviewed, as have the basic features of primary hemochromatosis and the other iron storage diseases. A patient having proven primary hemochromatosis with the classical features of diabetes, cirrhosis of the liver, bronzing of the skin, hypogonadism and hypersideremia has been presented. After removal of thirty-one pints of whole blood in the course of a year, without ill effect, the BSP retention dropped from a high of 17.2 percent to a level of 5 percent retention of the dye in forty-five minutes. This was interpreted as indicating that repeated phlebotomy may result in improved liver function

in some patients having primary hemochromatosis, but whether increased longevity will ensue is as yet an unanswered question.

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85 Jefferson Street



WANT A CHUCKLE?

SEE "OFF THE RECORD . . ."

Share a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. Pages 25a and 29a.

FRANCESCO RONCHESE, M.D.

Providence, Rhode Island

Uncommon aspects of common dermatoses concern location, sex, age, number, color, texture, configuration, symmetry or asymmetry, unilaterality or bilateralness. It may mean more difficulty in reaching a diagnosis. A few examples of uncommon aspects of common dermatoses are discussed and illustrated.

Psoriasis Psoriasis offers an example of such aspects when it is located outside the extensor surfaces of knees and elbows. When it involves the flexor surfaces of knees and elbows and the arm-

location is not on the costal area. However, zoster can occur in any area of the body and, exceptionally, may be bilateral. Exceptionally, it may also recur. It is customary to console the distressed patient with assurance that a characteristic of herpes zoster is to develop only once in a lifetime. I so told once to a patient and he remarked: I have heard this before. Sure enough, his record showed he had herpes zoster ten years previously.

Comedones and Acne The typical areas involved are the face, the shoulders, the chest. Unusually these are found only on the chest, while the face shows no lesions. But the face alone may be severely involved and not a trace found on back and chest. Rarely the lesions extend to the arms and the lower back. Exceptionally, the buttocks alone are involved. Rarely, comedones and acne appear in infancy. Conglobata lesions, when isolated and found in the early teens may be misleading. Often it is a problem to convince the family that the huge single conglobata lesion is simply a variety of juvenile acne.

Ringed Eruptions While concentric rings represent the typical configuration of tinea circinata, a variety of dermatoses may show rings as one of their uncommon manifestations. Lichen planus, psoriasis, erythema multiforme, syphilis, may show ringed lesions.

Striae Distensae. A strange phenomenon is the formation of striae distensae in adolescence in the absence of loss of weight or of evidence of

Uncommon Aspects Of Common Dermatoses

pits, it is called psoriasis inversa or psoriasis paradoxa, because it is a kind of established rule that psoriasis appears electively on the extensor surfaces. But when lesions are scattered everywhere, including the flexor areas, as part of a generalization of the disease, the variant may be considered only partially inversa.

Zoster One may hear that a certain eruption cannot be zoster because there is no half-girdle configuration and the



PSORIASIS INVERSA (AXILLA) IN A NINE YEAR-OLD GIRL



A Common benign
pigmented nevus in
an uncommon loca-
tion.



PSORIASIS PARTIALLY INVERSA





Cushing's syndrome. It is inexplicable why certain women do not develop striae distensae on their abdomen after pregnancy (incidentally, neither did their mothers and grandmothers) while they may show plenty of them elsewhere. These women have a peculiarly soft, silky, lax skin, with a texture, to the touch, very close to the skin of Ehlers-Danlos syndrome. Perhaps the skin of these women represents part of the syndrome.

170 Waterman Street



1486



Left, absence of abdominal striae distensae after pregnancy is uncommon. Plenty of them are elsewhere. Below, acne vulgaris of adolescence limited to the buttocks is uncommon.

MEDICAL TIMES



Left, a palmar zoster in a woman. Lower left, a perineal zoster in a man. Typical grouped blisters, unilaterally, sharp boring pain rather than itching, development overnight are capital elements for a diagnosis of zoster in spite of the very uncommon location. Lower right, extension of juvenile acne vulgaris from shoulders to buttocks is an uncommon manifestation of the disease.



THE Rh PROBLEM

Erythroblastosis fetalis ("erythroblastosis," "hemolytic disease of the fetus and newborn") results from blood-group incompatibility between fetus and mother, as was first shown by Levine *et al.*¹ The most important is Rh (D) incompatibility which is present when the fetus is Rh-positive and the mother Rh-negative. Such incompatibility fortunately does not usually cause any trouble, but if enough fetal red blood corpuscles get into the mother's circulation she may develop antibodies against the Rh factor, which is foreign to her. The antibodies, if and when formed by the mother, leak into the baby's circulation, attach themselves to the red blood cells and lead to their rapid destruction. This tends to make the fetus anemic, and it tries to compensate by producing new red cells rapidly. The rapid destruction and rapid production of blood in the baby, both before and after birth, are responsible for the clinical signs and the therapeutic problems, and determine whether the baby is born dead or alive, in good condition or in poor condition.

The study of erythroblastosis can be a full-time occupation, and a complete discussion of what is known, suspected,

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imagined, and hoped would go on forever. A few major topics were selected for the discussion to follow. Such a major problem as erythroblastosis caused by A or B (ABO) incompatibility,² which is responsible for more than half the cases — some of which are severe and result in brain damage — has been almost completely by-passed in order to cover the Rh problem more adequately. Treatment is covered very sketchily. It is hoped, however, that the reader will have a better understanding of the problem as a result of what he finds here, and so be able to deal more effectively with what is now recognized as a major problem of the neonatal period.

Sensitization To Rh The blood-group factor Rh (D) is a powerful anti-

and Erythroblastosis Fetalis

gen. If an Rh-negative recipient is given a transfusion of blood from an Rh-positive donor sensitization is very likely to develop. The Rh-negative person has none of the substance called "Rh factor" on his red blood cells, and to him Rh is thus a foreign substance. The Rh-positive person has thousands of "patches" of Rh on each of his red blood cells, which accounts for their agglutination when anti-Rh antibodies (anti-Rh typing serum) are added. Rh-positive red cells transfused into an Rh-negative recipient may survive normally if he has had no previous transfusion of such blood. But the chances are about eighty per cent that after a few weeks to a few months anti-Rh antibodies will be demonstrable in the recipient, especially if he received a small booster dose of Rh-positive blood a week or two before the test. He is then "immune" to Rh, and Rh-positive blood is found incompatible with him on cross-match, and a subsequent transfusion of Rh-positive blood would cause a hemolytic reaction, possibly fatal. This is

one of the examples of undesirable immunity, usually referred to as "sensitization."

Women are no less apt than men to become sensitized to Rh, and it is a tragic mistake to give a transfusion of Rh-positive blood to a young Rh-negative woman or to a female child. If she marries a man who is homozygous Rh-positive, she may have only stillborn erythroblastotic babies.

Intramuscular blood, because of the quantities involved, is probably less dangerous than a large intravenous transfusion, but some red cells do get into the circulation and sensitization to Rh may occur if the donor is Rh-positive and the recipient is Rh-negative. In the present era of medicine there is no reason to give intramuscular blood. Fresh, unfrozen plasma may contain sufficient numbers of intact red blood cells to cause Rh sensitization if the red cells were not separated with care. This is not an important cause of sensitization, but should be kept in mind when fresh plasma is used. It is probable that 1.0 ml. of Rh-positive blood is enough to cause sensitization in most Rh-negative recipients.

Pregnancy is the usual cause of sen-

From the Department of Pediatrics, Harvard Medical School, the Children's Hospital, Boston, the Blood Grouping Laboratory of Boston, and the Boston Lying-in-Hospital.

sitization in Rh-negative women, yet less than ten per cent of such women ever do become sensitized as the result of pregnancy, and then only if at least one of their babies inherited the Rh factor from its father. Chown showed³ that the mother may sometimes receive a large transfusion of blood from the fetus before delivery. Delivery is a time of special danger,⁴ particularly if it is a difficult delivery or Caesarian section, when perhaps a few ml. of fetal blood may get into the maternal circulation. It is quite possible too that slow leakage of small quantities of blood from fetus to mother is not rare, just as the passage of intact red cells through the normal kidney may occur according to the normal Addis count. If so, and the red cells are of a compatible type they accumulate in the maternal circulation and may eventually constitute the "minimal sensitizing dose" for the individual.

There may be no way of preventing Rh sensitization, and even if there is it is quite certain that sensitization will still occur sometimes. It should always be looked for in pregnant Rh-negative women—prenatally—in order to be prepared for an erythroblastotic baby before it is born.

Although it is dangerous to give Rh-positive blood to Rh-negative recipients, the reverse is not true. Rh-negative blood is not incompatible for an Rh-positive recipient because one cannot become sensitized by nothing. However, Rh-negative blood almost invariably has blood factors c (hr') and e (hr'') which an Rh-positive recipient may lack, and has an impressive variety of other blood-group factors, one or more of which the recipient may lack. Thus, Rh-negative is by no means a "universal donor" type though it is often considered so.

Effect of Anti-Rh on the Rh-Positive Fetus Rh antibody formed by the mother gets into the fetus and coats the red cells if the fetus is Rh-positive. A positive Coombs test shows only that anti-Rh antibody molecules have entered into combination with the Rh molecules on the red cell surfaces. The red cells are not visibly damaged—they do not agglutinate or hemolyze spontaneously and they seem to carry oxygen and carbon dioxide normally. The antibody does undoubtedly affect them, because their life span is greatly shortened, to six to ten days in erythroblastosis of moderate severity⁵ as compared with 100-120 days in normals.

There is no convincing evidence that Rh antibody has any effect on other tissues. In particular, there is no evidence that anti-Rh damages brain cells thus producing kernicterus, nor that it damages the liver or depresses the bone marrow. In short, the effect of anti-Rh on the Rh-positive fetus is to reduce the life span of its red cells, which leads to anemia unless the fetus makes blood more rapidly.

Response of the Fetus In Utero The erythroblastotic fetus compensates as well as it can for the shortened life of its red blood cells. Eighty per cent produce new red cells fast enough to maintain adequate hemoglobin concentrations. Most of them seem to do this easily for they are born without much enlargement of liver and spleen. A great many of them, in fact, cannot be distinguished by physical examination from completely normal babies except for slight yellowish discoloration of the umbilical cord. A small number are barely able to maintain a hemoglobin concentration high enough to survive. These usually have marked en-

largement of liver and spleen and often are in heart failure at the time of birth. All gradations of severity are seen.

About 20 per cent fail successfully to compensate in spite of increased red cell production. They make blood more rapidly than normal, but not rapidly enough. Most of these are born dead, usually with massive edema. Some are born alive in desperate condition with severe anemia and generalized edema, and nearly all of these die without ever establishing satisfactory respirations. Studies of blood production in erythroblastosis⁶ indicate that most of those who become very anemic have suboptimal red cell production as compared with other fetuses. Search for the cause or causes of this relatively ineffective hematopoiesis is almost certain to be an important project in the future investigation of erythroblastosis.

As long as the fetus remains inside the uterus, the excretion of bilirubin is no problem. It is obvious that the placenta has something to do with the excretion of bilirubin in utero, and the average serum bilirubin level at birth in erythroblastosis is only five mgms. per cent. Seldom does the serum bilirubin exceed 10 mgms. percent at birth.

Partly because the serum bilirubin is kept rather low, and partly for other reasons still unknown, the skin of the erythroblastic baby is not jaundiced at birth except for the faintest trace of lemon-yellow color, and that only rarely. Only the umbilical cord usually shows a slight yellowish color.

Comparison of Erythroblastosis Before and After Birth For most practical purposes, erythroblastosis is two different diseases. One is the intrauterine disease in which jaundice is no problem at all but anemia is a critical

problem. Anemia is such a serious problem *in utero* because no one has yet found a method of preventing or correcting it while the baby remains unborn. This is almost the opposite of the situation after the birth of the baby. Now it is possible to correct anemia in a few minutes, simply by infusing some blood, which nearly anyone can do with modern equipment, and so anemia becomes a minor problem after birth from the therapeutic viewpoint. The critical problem after birth is that of jaundice and high bilirubin, since bilirubin is closely related to,⁷ and probably causes, the brain damage known as kernicterus. Further discussion of jaundice and bilirubin are important, especially because kernicterus is preventable.⁸

Serum Bilirubin in Newborn Infants Figure 1 shows data collected by Hsia⁹ when he was associated with us at the Children's Hospital. Twenty-four normal full-term infants averaged two mgms. of bilirubin per one hundred ml. of cord blood serum at birth. The average level at one day was about six, and at two days about seven, after which it declined. In fifteen premature infants, weighing from 1475 to 2240 grams, bilirubin at birth averaged about one mgm. per cent. It rose steadily for four days, averaging about twelve at the end of four days and then slowly falling. By adult standards these are very high levels of bilirubin, yet these were perfectly normal newborn babies. One other difference between these newborns and jaundiced adults is that the bilirubin in the normal newborn is entirely of the indirect variety, while the bilirubin seen in adult jaundice is in most cases principally the "direct" or conjugated (detoxified) bilirubin. The normal newborn thus has quite consider-

able amounts of a substance—"indirect" bilirubin — which is considered toxic, especially to the brain, when it is present in too large amounts. "Normal" babies rarely accumulate sufficient bilirubin to be seriously dangerous, but erythroblastotic babies very often do, because in addition to their natural inability to excrete bilirubin they are producing it very rapidly because of rapid red cell destruction. The curve in Figure 1 shows how rapidly bilirubin rises in the average erythroblastotic baby. All these were treated by exchange transfusion, and all promptly began excreting bilirubin well, but if they had not been treated most would undoubtedly have gone above 20 mgms. per cent within the first 36 hours of life. Experience has shown that levels below 20 mgms. per cent are quite safe, and that as the level exceeds 20 the danger of kernicterus steadily increases.

Some newborns do not have the natural inability to excrete bilirubin that is seen in the majority up to the third to

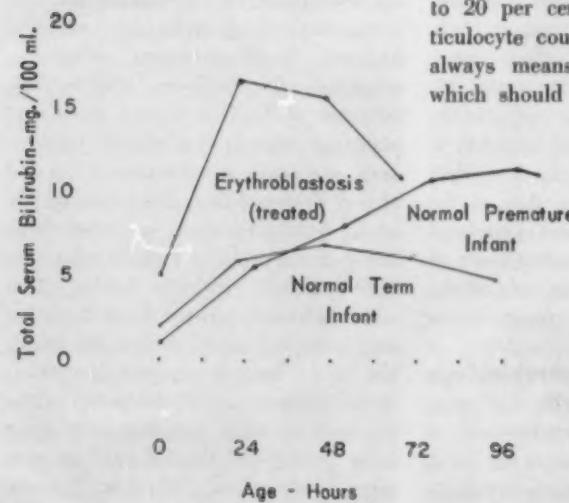


Fig. 1 Serum bilirubin levels in newborn infants (with permission from the J.A.M.A.).

fifth day. Such babies, if they have erythroblastosis, do not develop jaundice but may still become very anemic.

Severe Jaundice in the Absence of Anemia A substantial number of erythroblastic babies with a severe hemolytic process manage, by dint of very rapid red cell production, to maintain normal or nearly normal hemoglobin levels. Such infants, because they are destroying blood rapidly and producing a lot of bilirubin, and because they have no more ability to excrete bilirubin than normal newborns, develop very high bilirubin levels in a very short time. Because their hemoglobin levels are so normal, they may be considered to have mild erythroblastosis until the brain damage has occurred and it is too late to do anything helpful. The smoke screen of the high hemoglobin at birth is made worse by the natural tendency of the hematopoietic system to maintain its rapid activity for the first three to five days after birth.

This type of case can be spotted at birth by a high reticulocyte count (15 to 20 per cent or higher). High reticulocyte count plus high hemoglobin always means severe erythroblastosis, which should be treated by immediate

exchange transfusion. The absence of anemia or of a falling hemoglobin in such babies must not be allowed to blind one to the grave risk of kernicterus, which if it does not kill at once leaves the baby with cerebral palsy.

Figure 2 is an illustration of what may actually happen. This eight lb. baby had a hemoglobin concentration at birth of 13 grams, and this rose within two hours (as is not uncommon) to 15 grams where it remained for three days. Cord serum bilirubin was 7.5 mg. per cent. The Coombs test was positive but there was no enlargement of liver and spleen and the baby looked the picture of good health. At the age of 40 hours the hemoglobin was still 15 grams but the serum indirect biliru-

bin was over 30 mgms. per cent and the chief nurse noticed that the baby had some head retraction and did not take his feedings. The house officer at that time noted opisthotonus, rigid extension of the arms with inwardly rotated wrists, and a shrill cry. It was obvious that the baby had kernicterus. Physical signs of kernicterus persisted but gradually became less pronounced as time went on. Not until four days of age was a fall in hemoglobin noted. Thereafter the hemoglobin fell steadily to 5.4 grams at 18 days of age, requiring two small blood transfusions.

The baby was a problem because of excessive crying. He seemed always to be hungry, but did not take feedings well. At the age of 13 months he was obviously very deaf and was not sitting up. As he grew older he had the typical athetoid cerebral palsy of kernicterus with paralysis of vertical eye movements and difficulty in swallowing. He died at age six of pneumonia.

By present standards this case was badly managed. Many later siblings of similar children have recovered fully, without sequelae, through the use of multiple exchange transfusions. The case illustrates, most importantly, that

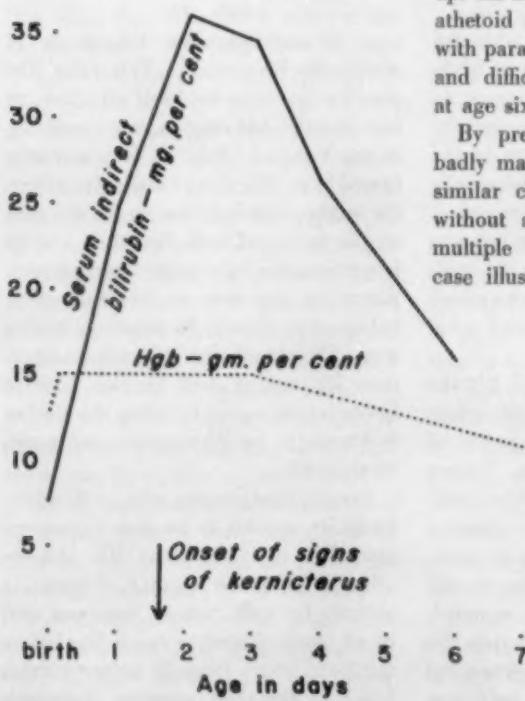


Fig. 2 Course of untreated erythroblastosis with severe jaundice in the absence of anemia in the first few days of life.

FAMILIES		IMPORTANT BLOOD-GROUP FACTORS			
ABO		A	B	H	
RH	D				
	C	c		C ^w	C ^x
	E	e		E ^w	
	f	G		V	
MNS	M	N		M ^x	
	S	s		U	
	Hu	He		Mi ^a	Vw
KELL	K	k		Kp ^a	Kp ^b
DUFFY	Fy ^a	Fy ^b			
KIDD	Jk ^a	Jk ^b			
LEWIS	Le ^a	Le ^b			
LUTHERAN	Lu ^a	Lu ^b			
P	P	Tj ^a			
UNCLASSIFIED		Levay	Gr	Ven	Ca
	Be ^a	Wr ^a	Di ^a	By ^a	Rm
	Vel	I	Yt ^a		

Fig. 3 The principal red-cell blood-group factors of the nine known blood-group families. The inheritance of the "unclassified" factors has not yet been fully worked out. Most of these blood-group factors are known to be able to cause erythroblastosis fetalis — all but A, B, and Rh (D) are uncommon or rare causes.

terrible trouble can occur even when the hemoglobin is high and remains high.

Diagnosis It is very important to make a presumptive diagnosis prenatally by tests for anti-Rh antibodies in the Rh-negative woman. We customarily test at 30 to 32 weeks and repeat at about 37 weeks when the first test was negative. When sensitization is detected, the amount of antibody is determined by titration, since titer has useful prognostic value.

If the mother is sensitized to Rh, the detection of enlarged liver and spleen in the baby makes the diagnosis of erythroblastosis quite certain. Edema and rapidly developing petechiae indicate grave disease. If the examination is done at birth there will be no jaundice of the skin, but some yellowish discoloration of the cord may be expected.

A positive Coombs test makes the diagnosis of erythroblastosis certain but is of no prognostic value. The baby may

type Rh-negative even though it is genetically Rh-positive. This false Rh-negative test reverses itself after two to four months, but may be very confusing at the time of birth. It is apparently caused by "blocking antibody" from the mother which so ties up the Rh sites on the fetal red cells that they are no longer reactive to anti-Rh typing serum. About 10 per cent of erythroblastic babies type falsely Rh-negative in this way. The tip-off that it is a false negative Rh typing test is the positive Coombs test, especially when the mother is known to be Rh-negative and sensitized to Rh.

Erythroblastosis due to A or B incompatibility appears to be even more common than that caused by Rh. All the other blood-group factors (Figure 3) account for only two or three per cent of all cases. Jaundice appearing before thirty-six hours (usually before twenty-four) is the most common diagnostic

feature. To detect jaundice in the newborn, blanch the skin of the forehead, chest, or back, with a finger or glass slide and observe the color of the skin before the blood rushes back into the area. Laboratory tests that should be done include the Coombs test (usually weak or negative in "ABO" erythroblastosis), serum bilirubin determination (direct and total). The mother's serum must be tested for "atypical" antibodies, and any antibodies detected should be identified as quickly as possible at the nearest reference laboratory so that a compatible donor may be selected. Physical examination, particularly in search for signs of other illness, is important. It is beyond the scope of this article to discuss the fine points of diagnosis in cases caused by blood factors other than Rh. Other sources may be consulted.¹⁰ The important thing is to consider the possibility of erythroblastosis in all newborns and to look for jaundice several times during the first two days in each newborn infant.

Treatment The details of the technique of treatment also are beyond the scope of this paper. In general, treatment has two aims: alleviation of heart failure and correction of anemia at birth in the very sick baby; and prevention of kernicterus in all. Exchange transfusions, repeated as necessary have been proved by world-wide experience to be effective in controlling the serum bilirubin and in preventing kernicterus.

Having established the diagnosis, as by finding that the baby has a positive Coombs test, one should do immediate exchange transfusion 1. if the baby is sick or 2. if the hemoglobin is less than about 14 grams or 3. if the serum bilirubin is high, or 4. if the reticulocyte count is higher than about 15 per cent,

or 5. if there is a history of death or kernicterus in a previous erythroblastic baby in the same family. 6. High maternal anti-Rh titer, above 1:64, might be considered an absolute indication, but if there is no other indication, and accurate bilirubin levels can be obtained whenever desired, it is possible to avoid many exchange transfusions in babies whose serum bilirubin remains below 20 mgms. per cent with no treatment.

Two, or even three or more, exchange transfusions are effective in controlling the rise of bilirubin in those cases where a single one is not sufficient. In our own experience, kernicterus was not eliminated until we began to do multiple exchange transfusions. Approximately 20 per cent of the babies require more than one exchange.

Although exchange transfusions are absolutely indispensable in the successful management of erythroblastosis, the procedure is not without danger in itself. It should not be attempted by an inexperienced team if an experienced team is available nearby, and unnecessary exchanges should be avoided. Exchange transfusion by skilled persons is the conservative treatment for erythroblastosis, however, and it is better to do several unnecessary transfusions than to fail to do a single necessary one.

Figure 4 may be found useful as a guide to the use of exchange transfusion in controlling bilirubinemia. It will be noticed that the criteria change with advancing age. In the newborn baby, age must always be reckoned in hours, not in days, because changes occur with such rapidity.

Blood selected for exchange transfusion should be similar to the mother's in type and should be compatible with her as demonstrated by crossmatch with

her serum. This should be done before the baby is born, if possible. If another compatible donor cannot be obtained, the mother's own blood should be used, but this should very rarely be necessary. Donor blood should be as fresh as possible. If the crossmatch is done before delivery, the donor may be bled on the day of delivery.

Exchange transfusion with compatible blood is the only method of controlling neonatal hyperbilirubinemia and preventing kernicterus. Glucuronic acid and sodium glucuronate, orally or intravenously, are almost certainly without value in preventing kernicterus, and are probably dangerous in themselves.

Induction of Labor Some stillbirths can be prevented by induction of labor at any time before spontaneous labor would have occurred. Perhaps of even greater value is the opportunity to plan

in advance the treatment of the baby when the time of delivery is selected in advance. The only real problem is when to induce. Experience at the Boston Lying-in Hospital indicates that induction at 37 weeks gestation, or later, by artificial rupture of the membranes when the cervix is favorable, has been at least as safe as waiting for spontaneous labor. It has undoubtedly had a favorable effect on the care of the newborn baby.

Early delivery in cases where there has been a previous stillbirth is another question. Since the majority of stillbirths will have occurred before seven months gestation, which is too early a time to deliver these babies, early delivery has limited usefulness. In our experience, delivery before 35 or 36 full weeks has not succeeded in saving any babies.

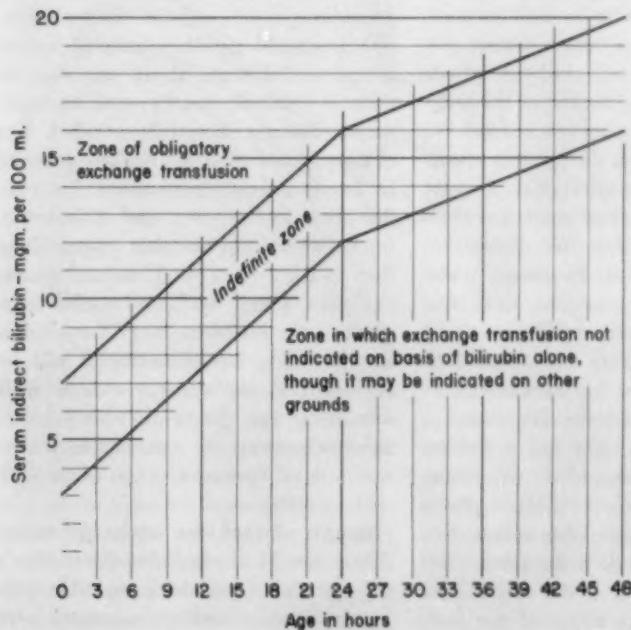


Fig. 4 Tentative guide to the use of serum indirect bilirubin as the sole criterion for exchange transfusions in mature infants. (Reproduced with the permission of the New England Journal of Medicine).



Fig. 5 Equipment for collection of small blood samples, which allows for nearly 100 per cent recovery of the serum for test purposes. See text.
(after Davies)

Test for Bilirubin in Infants
Because of its crucial importance in the management of erythroblastosis the bilirubin method used at the Children's Hospital is given here in some detail.

The most important feature is the collection of the specimen, which is done by the method of Davies.¹¹ Figure 5 shows the equipment: a Bard-Parker No. 11 blade or other sharp-pointed blade for pricking the baby's heel, 6-8 cm. lengths of large-bore glass capillary tubing (inside diameter 2-3 mm.), and vaccine vial caps (The West Co., Phoenixville, Pa.) for closing the ends of the tubes after they are filled. Unless the baby's foot is warm it should be warmed with warm compresses, in order to assure a flow of blood. A fairly deep stab is made in the heel—preferably 2 stabs in the form of a V or X. When blood flows out it is collected in the capillary

tubes (uncapped at both ends). Two tubefuls (about 0.6 cc.) are sufficient for serum bilirubin test. Two precautions must be observed for successful collection of blood. The capillary tubes must have been cleaned with a good detergent solution, rinsed well, and dried before use. In the collection of the blood the tube must be held at a slant such that the blood must run slightly uphill (Figure 6): though it may seem paradoxical, blood runs in well under these conditions, but air stays out. It is advisable also not to squeeze the tissue vigorously, since this may speed blood clotting more than it promotes bleeding. When the tubes are about three-fourths full they are capped at both ends with the vaccine vial caps. Centrifugation may be done immediately: providing the ends of the tubing are not jagged there is no leakage

during centrifugation. The cap at the serum end is now removed, the glass is scored at the serum-cell boundary (Figure 7) with a sharp file, and the tube is broken carefully. By this method practically all of the serum originally collected can be recovered. The serum is now transferred to a clean dry 0.2 ml. pipette by approximating the ends of tube and pipette and tilting (figure 8). As before, the entry of air bubbles is prevented by keeping the pipette at a very slight tilt so that the serum must run slightly uphill.

From this point the measurement of bilirubin becomes a "macro" method.¹² The 0.2 ml. of serum is diluted to 10 ml. with distilled water in colorimeter tube A. 5.0 ml. of the diluted serum is transferred to a second colorimeter tube (B). 1 ml. of diazo blank* is added to tube A. The colorimeter is adjusted to 100 per cent transmittance with this blank (tube

A) using filter 540. 1.0 ml. of diazo reagent** is added to tube B and a reading is taken in the photoelectric colorimeter at 1 minute. 6.0 ml. absolute methyl alcohol are added to tubes A and B, and mixed. At the end of 30 minutes a second reading is made in the colorimeter, again with the 540 filter, the colorimeter having again been adjusted to 100 per cent transmittance with the blank (tube A). If the Evelyn colorimeter is used, the "5 cc. aperture" must be used for the 1 minute reading, while the 10 cc. aperture should be used for the 30 minute reading. Results are calculated from the following formulas,

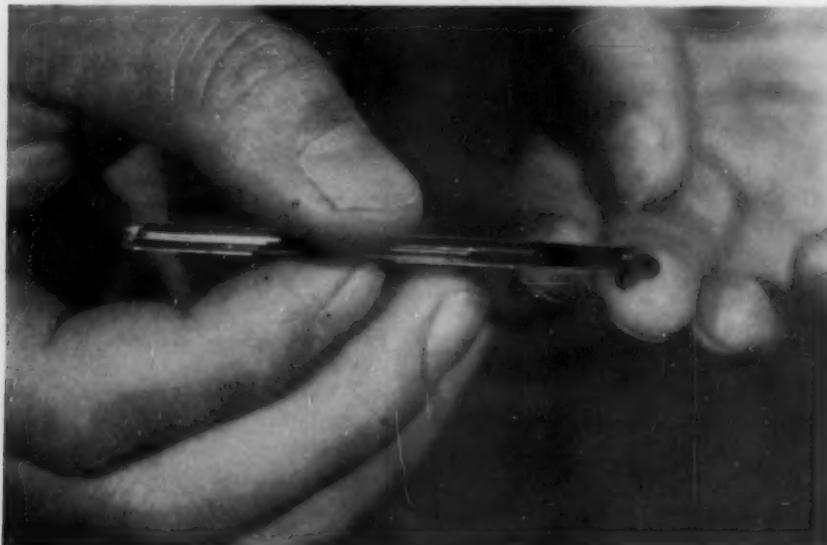
* diazo blank: 15 ml. concentrated HCl in 1000 ml. distilled water.

** diazo reagent: prepare freshly each day by adding 0.3 ml. of solution N to 10.0 ml. of solution S.

Solution N: 0.5 per cent sodium nitrite in distilled water.

Solution S: 1.0 gm. sulfanilic acid dissolved in 1000 ml. distilled water containing 15 ml. concentrated HCl.

Fig. 6 Collection of blood. Tilt the collection tube so that the blood must run very slightly up-hill to avoid the entrance of air bubbles.



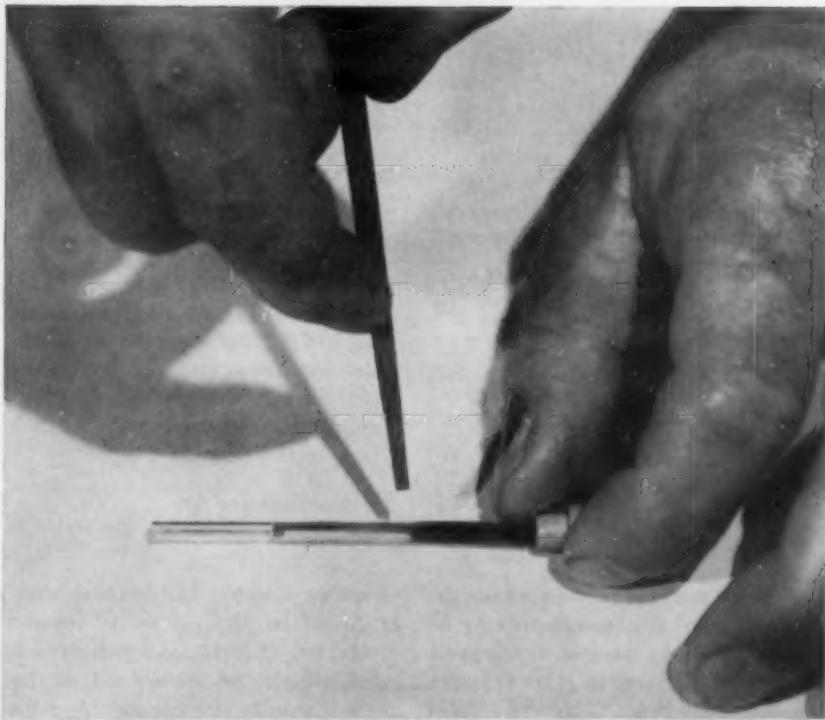
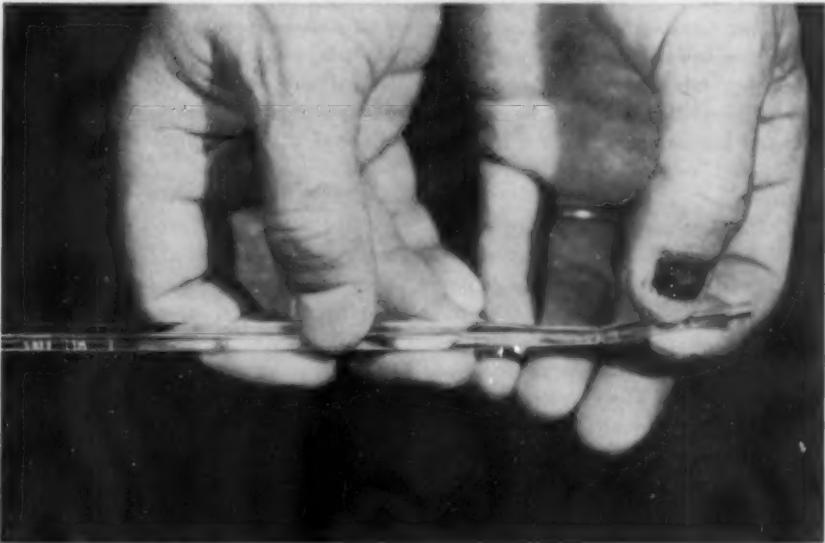


Fig. 7 Separating the serum. Cut the glass at the serum-cell boundary with a sharp file, and then break carefully.

Fig. 8 Transferring serum to a pipette. Do not try to use suction for the transfer. If the pipette is clean, the serum will run in easily and the flow is very easy to control.



the 1 minute reading, while the 10 cc. aperture should be used for the 30 minute reading. Results are calculated from the following formulas, where G is the colorimeter reading (in per cent transmittance), log means common logarithm, to base 10:

$$\text{"Direct" bilirubin} = \frac{2 \text{ minus log } G^{\ddagger}}{7} \times 100,$$

$$\text{total bilirubin} = \frac{2 \text{ minus log } G^{\ddagger}}{3.5} \times 100.$$

"Indirect" bilirubin = total minus "direct."

\ddagger 1 minute reading.

\ddagger 30 minute reading.

Results in the individual laboratory should be checked against the standard method in use at that laboratory, and it is well to standardize the results by sending part of a specimen to another laboratory, such as the Children's Hospital in Boston. When bilirubin level is very high it may be better to use only 0.1 ml. of serum instead of 0.2, and make the appropriate correction in the result. Any hospital laboratory should be able to do a serum bilirubin determination on infants by this method.

Summary

1. Not enough is known about the physiology of erythroblastosis to be able to say why anemia develops or what might be done to prevent severe anemia in the fetus. This and related matters require extensive investigation, and the problems are being worked on in many centers.

2. Too little is known about jaundice, but fortunately exchange transfusion especially when repeated as necessary has been demonstrated to control jaundice, and it is possible to prevent kernicterus, which is the only significant complication of erythroblastosis.

3. Diagnosis in cases of Rh incompatibility should be suspected prenatally by antenatal tests in all pregnant Rh-negative women. Diagnosis in the other cases usually depends on observation of early jaundice followed by simple laboratory tests.

4. Exchange transfusion should be done for the treatment of severe anemia with heart failure, but the usual reason for doing exchange transfusion should be for the prevention

of severe jaundice and brain damage. It should be planned far in advance of the baby's birth, and induction of labor should be considered an important step in this advance preparation. Suitable blood should be obtained before the baby is born, and crossmatched with the mother's serum.

5. Frequent measurements of serum bilirubin in erythroblastotic babies are essential to intelligent treatment. These can be done in any hospital with equipment that is easy to obtain.

6. Finally, there are so many different blood-group factors that may cause erythroblastosis that it is usually impossible to be sure before a baby's birth that it will not have this disease.

Consequently, all babies should be looked at a few times during the first day and a half of life to detect early jaundice or other signs of erythroblastosis so that treatment can be given when needed and unnecessary brain damage be prevented.

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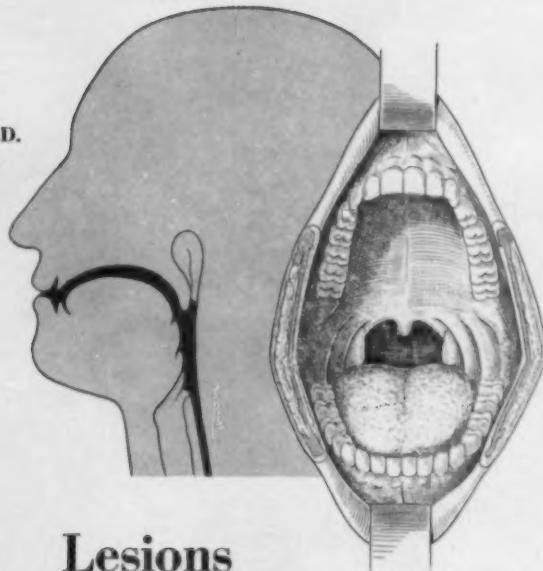
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The Treatment of Pityriasis Rosea with Convalescent Plasma, Gamma Globulin, and Pooled Plasma

"The treatment of pityriasis rosea with convalescent pityriasis rosea plasma is described and compared with an untreated control series and with a series of patients treated with pooled plasma and pooled gamma-globulin. The average untreated control case lasted 31 days, while cases treated during the first week of the disease with convalescent plasma averaged only 14.7 days. If treated during the first week the patient has only a modified form of the disease, but if the patient is treated later the disease runs its normal clinical course. Pooled gamma-globulin, possibly because of the presence of antibodies from some of the donors, also produced a marked shortening of the disease if given during the first week of the disease. In this series the average case lasted 17.3 days. Pooled gamma-globulin is readily available, while convalescent plasma is not. For this reason, the early use of pooled gamma-globulin in severe cases of pityriasis rosea may be most practical in helping to shorten the course of the disease."

Rolfe W. Salin, Arthur C. Curtis and Albert Wheeler
A.M.A. Archives of Dermatology, Vol. 76, No. 5, pp. 661-62

R. L. BRIER, M.D.
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Lesions of the Oral Cavity

“Stick out your tongue and say, ah”, said my family physician a number of years ago. He may have been trying to keep me busy, however he worked without the aid of all the laboratory tests that we use today. We sometimes forget to adequately examine the oral mucosa a tissue which can be of great aid in diagnosis.

The presence or absence of mouth lesions may be helpful in differential diagnosis. Pemphigus commonly shows mouth lesions while dermatitis herpetiformis does not. Lupus erythematosus may exhibit oral lesions while a polymorphous light eruption will not.

There are many lesions which may occur in the mouth—some of these are as follows:

1. Hypertrophy of gums due to Dilantin.®
2. Red (pink) teeth in congenital porphyria.
3. Leukoplakia — a premalignant lesion.
4. Fordyce's “disease” — aberrant sebaceous glands.
5. Evidence of cheek and lip biting—a nervous habit.
6. Periadenitis mucosa necrotica recurrans — necrotic ulcers of the mouth, etiology unknown.
7. Lichen planus—small white maculopapular lesions in the mouth which are asymptomatic.
8. Mucous membrane drug eruptions—often due to barbitals, phenolphthalein or Antipyrine.®

9. Thrush in infants—easily cured now with Nystatin.®
10. Mottling of tooth enamel from fluoride.
11. Hyperpigmentation of the buccal mucosa seen in Addison's disease.
12. Syphilis—any stage may show oral manifestations:
 - (a) Congenital Hutchinson's teeth.
 - (b) Primary chancre.
 - (c) Secondary mucous patches.
 - (d) Tertiary gumma.
13. Tuberculous lesions may be ulcerative, nodular or verrucous.
14. Herpangina — a virus disease of childhood causing small vesicular lesions with white tops on the posterior parts of the throat.
15. Behcat's syndrome — this triple symptom complex consists of aphthous lesions of the mouth, ulcers of the genitals and uveitis.
16. Contact dermatitis often due to tooth pastes, mouth washes, or the acrylic resins of dentures.
17. Peutz-Jeghers syndrome — pigmented spots on the lips or buccal mucosa associated with intestinal polyposis.
18. Ptyalism — excessive salivary flow may result from stomatitis or gingivitis, psychic stimuli, nausea, insertion of dentures and sialogogues (mercury, iodides, pilocarpine).
19. Bleeding gums due to hemophilia, thrombocytopenic purpura, leukemia or scurvy.
20. Metallic line on gums may be due to:
 - (a) lead—most common cause
 - (b) bismuth
 - (c) mercury
 - (d) arsenic
 - (e) silver
 - (f) copper
 - (g) thallium
21. Granuloma pyogenicum — small granulation tissue growth due to injury plus infection.
22. Verruca vulgaris—warts can occur on the lips as well as on the skin.
23. Aspirin (acetylsalicylic acid) burn of the cheek.
24. Vitamin deficiency — usually vitamin C, or nicotinic acid or riboflavin.
25. Angioneurotic edema may involve the mouth.
26. Actinomycosis of the jaw may follow a tooth extraction.
27. Torus palatinus—a hyperostosis of the palate.
28. Pigmentation from hemosiderin may persist after attacks of purpura.
29. Pernicious anemia causes glossitis and atrophy of papillae.
30. Herpes simplex — in this location the vesicles rupture and the lesion may resemble aphthous stomatitis.

The oral mucosa differs from the skin in that no stratum corneum (keratin layer) is present, the surface is continuously moist and no pigment is present. The oral mucosa does not itch, therefore many mouth lesions do not produce symptoms and the patient may not know they are present, or may not think they are important.

1367 Government Street

Bladder Sphincter Incontinence Following Prostatectomy

*Treatment with Prostigmine
and Diphenhydramine Hydrochloride**

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Detroit, Michigan

A forty-six year-old salesman was operated on August 21, 1953, for an enlarged prostate by transurethral resection. He went into shock from postoperative hemorrhage. Levarterenol bitartrate, aqueous adrenal cortex extract, and transfusions led to his recovery. On removal of the indwelling catheter four weeks later it was noticed that he was unable to control the bladder sphincter with resultant dribbling. He was discharged on September 11. Distress in the hypogastric region, and pus and red cells in the urine, led to his readmission to the hospital on October 19, and on the next day in the course of a cystoscopic examination, two stones were seen in the inflamed bladder. The stones were crushed. A few days later he complained of abdominal pain with intermittent cramps, and frequent vomiting. Intestinal obstruction was diagnosed and a laparotomy revealed a band attached to a previous appendectomy scar, and

around a loop of small intestine. This was freed. A small bladder perforation was found and repaired.

He was discharged from hospital on November 13, still incontinent. This made the wearing of a rubber urinal necessary. Periodically he received antibiotics for pyuria. Sounds were passed at weekly intervals by the urologist. He was given streptomycin and penicillin but the dribbling of urine continued.

He reentered Harper Hospital October 11, 1954, and was cystoscoped on October 13. A remnant of a prostatic bar was seen and resected. The incontinence of urine continued on his discharge from hospital on November 17. The prepuce and glans penis was inflamed and tender from frequent contact with urine.

An intravenous pyelogram made in February 1957, showed the kidneys to

* Benadryl, Parke, Davis and Co., Detroit, Michigan.

be of normal size, contour, and position. Both kidneys functioned normally and no hydronephrosis, cyst, or tumor mass was present.

The bladder had an unusual configuration incident to the previous bladder surgery. The incontinence continued unabated from the time of operation on August 23, 1953. On October 21, 1957, he was placed on prostigmine bromide 15 mgms., three times a day. This produced some improvement, but he could not fully control the bladder sphincter, so much so that without the urinal, he would soil his underwear and trousers. On December 17, 1957, he was placed on Diphenhydramine hydrochloride, (Benadryl[®]) 50 mgms. three times a day in addition to the prostigmine. When he returned on January 29, 1958, he was much improved and had no more incontinence. He discarded the rubber urinal bag. Previously he had numerous accidents with the rubber urinal due to overflow resulting in soiling his underwear and trousers necessitating frequent changes of these garments.

On May 17, he said there was no more dripping and he has continued the medication since January.

Comment As it is known, prostigmine stimulates the smooth muscle of the urinary tract. It enhances ureteral peristalsis and promotes bladder evacuation.

Goodman and Gilman¹ state that the actions of neostigmine and physostigmine on the central nervous system are of particular interest because of the possible basis they afford for the use of these agents in certain neurological and neuromuscular syndromes, and for the indirect evidence, which they provide concerning the role of acetylcholine in

central synaptic transmission. As they said "Unfortunately the state of knowledge of the central effects of anticholinesterases is far from satisfactory. Neostigmine has been employed for the prevention and treatment of atony of the detrusor muscle of the urinary bladder." Antihistamines may cause urinary retention by their anticholinergic spasmolytic effect.

Schneirson and Bergman² comment on these effects of the antihistamines. Many of the newer drugs with anticholinergic effect such as Banthine[®], Probanthine[®], Antrenyl[®], Prantil[®] and many others may cause overdistention of the bladder and subsequent retention. The ganglionic blocking drugs used for hypertension may cause urinary retention. Hexamethonium and Ansolysen[®] are examples of this.

The use of prostigmine and an antihistaminic agent acting on the nervous sphincter control of the bladder has a physiological basis. From the clinical standpoint loss of sphincter control followed a transurethral prostatic resection from September, 1953, until January, 1958. So for a period of over four years this patient was incontinent and the administration of prostigmine and diphenhydramine hydrochloride resulted in prompt return of sphincter control. It would hardly appear that this therapy was the result of the long arm of coincidence considering the fifty-two months of incontinence. No originality is claimed for this form of therapy and others no doubt have used this combination.

Summary

A case of urinary incontinence following a transurethral resection of

the prostate was treated successfully with prostigmine bromide and diphenhydramine hydrochloride (Benadryl®). The incontinence was present for a period of over four years (52 months). Initial treatment with prostigmine alone improved the in-

continence but still required the wearing of a rubber urinal. The addition of diphenhydramine hydrochloride resulted in complete control of the incontinence.

The pharmacologic action of the drugs used is briefly discussed.

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MEDICAL TIMES

INJURIES Which May Become Major Problems

W. COMPERE BASOM, M.D.

El Paso, Texas

An outstanding example of an injury which may become a major problem may be found in the acutely injured patient. It is most likely to be present with the fracture (usually comminuted) due to a direct blow. The overlying contused soft tissue may look almost normal when first seen and one may be tempted to do an open reduction through this area when that procedure is indicated and essential for the management of the case. However, if there has been obvious severe trauma, a delay may prevent a catastrophe. A few days later the soft tissue may reveal the full effects of the trauma, the extent of which may be astounding. At this time, it is obvious that an incision through this area would have been accompanied by extensive sloughing of the soft tissue and probable infection of the bone.

Soft tissue injury affects bone healing. If extensive, union will usually be delayed. Thus we should delay making

incisions and doing open reductions through devitalized areas until the effect of the trauma is obvious. We should wait until the soft tissue will withstand the procedure of open reduction. It is wise to avoid cast pressure over these areas. It is also important to avoid being blamed by the patient, for the slough which may appear. The patient should be informed in the beginning that the trauma has been severe and that soft tissue problems and sloughing may develop.

Circulatory problems should be anticipated and explained to the patient prior to their development. Trauma of the extremities in any location may be the factor, however, the following locations are commonly affected: The elbow, wrist, forearm, popliteal area, femur, leg (tibia and fibula). Elbow fractures should have a circulatory check of radial and digital pulsations frequently (that is every fifteen to twenty minutes). If the pulse is not definitely palpable and the fingers become cold or numb, I prefer an open reduction procedure, particularly for supracondylar fractures of the elbow in children. This reduces the fragments of the fracture and thereby removes the bone pressure on the vessels. Also, the osseous bleeding may be controlled and by the incision the hematoma is evacuated and its pressure decreased. Usually this is all that is necessary to restore circulation.

In any of these types of situations, a general anesthetic may be most helpful, in that it is one of the most effective agents for eliminating vascular spasm. Colles' fractures are at times accompanied by vascular spasm which is manifested by cold and painful fingers. If anterior ulnar and volar radial splints

are used to splint this type of fracture, the ordinary gauze bandage which binds them to each other can merely be divided. The splints can be spread easily and the pressure of the support can be altered. A vasodilator medication such as nicotinic acid or some suitable agent is indicated, and may prevent Sudeck's atrophy, which is the type that produces fibrosis and osteoporosis, and severe pain. The more pain the patient has, the more stiffness occurs and the less they use the member and then they develop more osteoporosis and pain. An intravenous vasodilator in the beginning when this first occurs may prevent a serious amount of disability later.

Fractures of the lower femur and trauma to the posterior aspect of the knee may be associated with serious vascular injuries in the popliteal area. It is wise to think about these in the beginning and be on guard for them and explore the vessels if the circulation is obviously embarrassed, or if the pulsations and other findings fail in the foot and toes. Minimal treatment of the fracture, or bone, or ligamentous injury is indicated and one must again explain to the patient and the relatives about the possible vascular injury inasmuch, as this may not in all probability be apparent to the relatives, and they may tend to blame the splint, or cast, or possibly even the physician when it is the injury which is responsible for an almost hidden type of major complication. Early exploratory operation with repair, suture, or arterial substitution, or even ligation at times may be necessary. If there is a serious fracture present it should be treated in the simplest possible manner; skeletal traction, a posterior molded splint, or the external pin fixation method. At any

rate, some method which will eliminate the fracture for the time being from the surgeon's concern will be most helpful and external pins with external fixation apparatus may be very successful in this regard.

It is wise to remember that Volkmann's ischemic contracture can also occur in the foot, and result from adhesive traction in children, plus the severe injury. The elastic bandage must not be applied too tightly over the adhesive tape and the adhesive tape must be applied in longitudinal strips and not circular bandaging since they are not elastic and will not allow for swelling. A circular cast, if present, should be bi-valved and spread, or even removed, if there is any hint of circulatory problems in this region. Careful observation of the circulation distal to the injury, and kind understanding care of the patient may be all important. In other words, if the patient states that the foot and leg are tremendously painful, one should adopt a sympathetic attitude and try to remove all pressure possible in effort to aid the patient. It is wise to remember at all times, that the vessels may be seriously injured and the situation may be hopeless regardless of what type of care can be given. At times, a relaxing or exploratory incision may be necessary for control of internal pressure in an extremity. The anterior compartment of the leg has rather fixed dimensions and the exploratory incision alone may prevent loss of all the contents of this compartment or trouble in other areas. It is of the utmost importance however to be on guard for hemorrhagic conditions such as hemophilia, and avoid exploring patients who have bleeding tendencies. An operation can produce a disastrous situation. Of

course it is better not to explore traumatic areas in patients with this type of situation, if possible, except when environmental circumstances are excellent.

At any rate, if these problems can be anticipated early, more can be done for the prevention of trouble in the treatment of the patient. If the patient and the relatives are all properly informed the chances are that they will not blame the physician for whatever poor results may unavoidably occur, and they may actually applaud his efforts, even though failure results. Early signs, such as, too much swelling, too much pain from a given injury properly evaluated early in the injury may prevent the development of a later serious complication.

A tiny puncture wound in the region of a tendon, particular the flexor area of the fingers may be associated with almost complete laceration of one of the major tendons, and yet the patient may have perfect function at the time of testing. The tendon may later part completely, and then the patient will have to have tendon repair. At that time if some other physician happens to see the case he may think that the tendon injury was merely overlooked when actually the tendon was functioning properly. In other words, it is always wise to explore lacerations which may involve tendons even though the tendon may give normal test results at the time.

Open reduction should be avoided if possible in extremities with severe soft tissue injury or swelling inasmuch as the additional swelling which occurs after the open reduction may be enough to cause severe circulatory embarrassment and its complications.

An embolus may be suddenly fatal before it is diagnosable. This is a very

disconcerting event. A patient who has suffered extensive injury, particularly about the pelvis, hips, legs, or thighs, and who is apprehensive may have a "silent" thrombosis with no particular findings on which to make a diagnosis and suddenly develop embolic phenomena.

If the patient is apprehensive and the pulse rate is increased, if there is pain in the calf, or area over the veins, then an anticoagulant may be useful, a ligation, life-saving. It is important at least to have thought of this diagnostic possibility. It is amazing how many thromboses are found in post-mortem examinations. Emboli are a greater threat than is ordinarily realized.

In the use of casts, small finger depressions may cause serious pressure sores later. Posterior aspect of the os calcis in calcaneous areas, the center of the back in spinal fractures, the anterior aspect of the wrist in Colles' fractures should all be guarded and pressure decreased. The pressure should be distributed over a wide area and adequate padding should be used. With anesthetic extremities or areas, the cast must be carefully applied and padding is most important.

Soft tissue interposition may cause non-union of fracture which ordinarily unite. For instance, nearly all fractures of the shaft of the femur in children unite in mere, overhead, suspended, adhesive type traction, the so-called Bryant's method. However, I have had two patients in whom the femur failed to unite. One was a long oblique fracture in the mid third of the shaft of the femur. On open reduction later on after union failed to occur, the vastus intermedius was found to have been interposed. The other patient had inter-

position of the quadriceps muscle tendon.

Both of these patients had a little more pain than the average and their pain persisted. In other words, they did not become comfortable. On clinical testing it was not possible to feel the bones click together. Therefore, it is our policy in fractures of the femur in children, if they do not become comfortable in a few days after the injury, and after traction has been instituted, to test these patients for interposed material. It may even be necessary to use a general anesthetic but if the bone ends do not click together, or if on the other hand there is a rubbery sensation, then one has to do an open reduction.

This is an interesting situation. At the last American Fracture Association Meeting in Chicago, one of the speakers reported a series of fractures of the femur in children. He stated that non-union fractures of the shaft of the femur in children had not been reported in the literature. Thus, this is a rare condition. It is merely wise to remember that it can occur, and that one should be on the lookout for it. By radiographic check-up examinations it will be noted that in fractures of the femur the usual callus will not develop when there is soft tissue interposition, and so these patients should be examined every week until callus is seen bridging the fracture site.

Summary

1. Soft tissue injury must be evaluated along with the injuries to the bone, if the patient is to be treated in the best manner possible.

2. Circulatory problems developing in fractured area should always be kept in mind so that all possible steps can be taken, if possible, to avoid serious complications.

3. Fractures of the femur in children are not always simple, and easy to manage. They may be associated

with serious complications, among which are Volkmann's ischemic contracture, gangrene, and also non-union fracture.

4. Two instances of fracture of the shaft of the femur in children, occurring in the author's practice since 1941, failed to unite with conservative measures, because soft tissue interposition was present.

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Constipation in Elderly Patients

*Treatment with Dioctyl Sodium Sulfosuccinate
and Dioctyl Sodium Sulfosuccinate plus Peristim**

A major problem in the care of the aged individual is the frequent incidence of chronic constipation, in many cases associated with fecal impaction. In general, as age advances past sixty, certain conditions combine to create this undesirable state.

Even in the relatively well individual, deterioration is more marked at this time, and the abdominoperineal musculature often is attenuated, while there is a diminution in or loss of reflex signals. This is especially true in those patients who have had cardiovascular accidents and in those with neurologic disorders of a degenerative nature. In some elderly patients, it might be supposed that the musculature could be so weakened that there is not enough muscle strength to produce evacuation.

Low residue diets, insufficient fluids, inactivity, use of medications which produce hard stools, and long-standing reliances on cathartics, add to the disturbance of natural bowel function. In some instances, palpation may reveal

marked spasticity with the descending colon hard, rigid, and often tender. Evidently in these patients, the use of irritant cathartics has resulted in hypertonicity and a spastic type of constipation.

When chronic illness is present in the elderly patient, the problem of constipation becomes greater. Strenuous measures to bring about fecal evacuation may be potentially dangerous; straining at stool is hazardous for patients with hypertension and/or heart disease. Many patients, having been warned by physicians not to strain, develop psychic blocks to proper evacuation.

In the course of years, many methods of bringing about soft, natural, bowel movements without strain have been tried. An entirely satisfactory means has not been found and most therapeu-

From The Pinehaven Nursing Home and Sanitarium, Inc.

* Colace® and Peri-Colace® supplied by Mead Johnson & Co., Evansville, Indiana.

RESULTS OF TREATMENT WITH COLACE AND PERI-COLACE FOR PERIOD OF FOURTEEN WEEKS

Patient and Age	Diagnosis	History of Impactions	Beginning Doses			Evacuations Per Week			Dose Alterations Per Week At Fourteenth Week		
			Co- lase	Peri- colace	Colace	First Week	After	Co- lase	Peri- colace	Colace	First Week
J. B., 69	DIABETES MELLITUS MUSCULAR DYSTROPHY		4	1		5	2	1			7
S. H., 72	ARTERIOSCLEROSIS, HEART ADENOCARCINOMA, SIGMOID	AVERAGE- WEEKLY	4	1		5	3	3			3
J. M., 92	MYOCARDITIS FRACTURE OF HIP	MORE THAN ONE A WEEK	2	1		3	4	3			3
W. K., 78	ARTERIOSCLEROSIS CHRONIC BRONCHITIS		4	1		4	—	—			7
O. K., 86	MYOCARDITIS, CVA WITH RESIDUAL R. PARISIS		4	1		4	4	0			2
F. S., 72	ARTERIOSCLEROSIS MALNUTRITION		2	2		4	4	0			2
J. J., 88	HYPERTENSION MYOCARDIAL		4	2		3	4	1			2
R. M., 69	ARTERIOSCLEROSIS PSYCHOSIS	OCCASIONAL	4	1		2	4	3			3
C. P., 79	CHRONIC CHOLECYSTITIS ARTERIOSCLEROSIS, HEART		4	0		5	0				7
S. A., 48	DIABETES—AMPUTEE ARTERIOSCLEROSIS		4	1		3	2	1			2
E. E., 91	ARTERIOSCLEROSIS, HEART FRACTURE OF HIP		4	1		4	4	2			4
F. Z., 87	ARTERIOSCLEROSIS PARKINSON'S		4	1		5	—	—			7
L. N., 72	HEMIPLEGIA AFTER CVA		4	0		2	0				5
M. S., 79	SEMILE PSYCHOSIS ARTERIOSCLEROSIS—PARKINSON'S		4	0		2	2	2			3

N. T., 84	DIABETES UTERINE PROLAPSE ARTERIOSCLEROSIS	FREQUENT	4	2	2+SSSE	0	3	4
I. S., 70	ARTERIOSCLEROSIS SENIORITY, EPILEPTIC ABDOMINAL HERNIA		4	0	3	—	—	5
S. S., 95	ARTERIOSCLEROSIS, HEART FRACTURE OF HIP		3	2	10	2	1	5
A. E., 85	HYPERTENSIVE HEART DISEASE		4	2	2+SSSE	0	3	4
M. A., 82	HEMIPLEGIA AFTER CVA MYOCARDIAL	WEEKLY OR MORE	4	2	6	4	1	3
A. D., 60	DIABETES HEMIPLEGIA, AFTER CVA	WEEKLY	2	3	2	3	3	9
H. R., 72	DIABETES MELLITUS	WEEKLY OR MORE	4	0	2	—	—	5
A. A., 72	DIABETES MELLITUS RHEUMATOID ARTHRITIS ARTERIOSCLEROSIS		2	2	2	3	0	11
M. C., 89	MYOCARDIAL	WEEKLY OR MORE	4	2	4	2	2	4
D. G., 86	CANCER, SKIN HEMIPLEGIA, AFTER CVA		4	0	3	—	—	11
R. F., 86	ARTERIOSCLEROSIS MYOCARDIAL		4	2	5	—	—	6
K. E., 63	ARTERIOSCLEROSIS, EPILEPTIC SENIILE PSYCHOSIS		4	0	4	—	—	10
E. M., 73	CANCER, BREAST ARTERIOSCLEROSIS		4	2	4	—	—	3
A. W., 44	PHLEBITIS CHRONIC PEPTIC ULCER	WEEKLY	4	1	6	—	—	6
M. S., 88	ARTERIOSCLEROSIS, HEART		3	3	4	0	6	7
E. L., 79	ARTERIOSCLEROSIS PARANOIDIA		2	2	2+SSSE	4	2	3
H. L., 79	SCHIZOPHRENIA		2	2	2+SSSE	4	2	5
E. C., 62	DIABETES MELLITUS		1	3	3	1	2	4

— Signifies that dosage was not altered.

tic agents heretofore employed have distinct disadvantages. Some may interfere with nutrition; others may lead to impaction; and still others may produce intestinal griping. When patients are dependent on cathartics their natural bowel motility becomes depressed, and this may result in another episode of constipation. Such an individual often alternates between an uncomfortable constipation and a more uncomfortable diarrhea resulting from overstimulation of the intestinal canal.

A number of investigators¹⁻⁴ have reported the efficacy of dioctyl sodium sulfosuccinate in the treatment of constipation and in recent months, a new preparation named Peri-Colace has met with success^{4, 6}. The action of dioctyl sodium sulfosuccinate (Colace®), which is a stool softener rather than a cathartic, is to cause, maintain, or increase hydration of the fecal material as it passes through the intestinal tract. Peri-Colace® is a combination of the latter stool softener with Peristim®, a mild peristaltic stimulant. Because constipation is a troublesome condition at Pinehaven and because it was postulated that Colace and Peri-Colace might provide the solution to the problem, we have undertaken the study of these two agents in a group of our elderly patients.

Clinical Study The results of therapy with Colace and Peri-Colace were observed in thirty-two patients, aged sixty to ninety-five, for a period of fourteen weeks. The ailments of these patients included the following conditions: Diabetes mellitus, arteriosclerosis, hypertension, myocarditis, intestinal and other malignancies, malnutrition, abdominal hernia, paralysis (due to cerebrovascular accidents), fracture of the

hip, amputation for various causes, rheumatoid arthritis, phlebitis, chronic peptic ulcer, chronic bronchitis, epilepsy, Parkinson's disease, muscular dystrophy, senile psychosis, schizophrenia, and paranoia.

Each of these thirty-two patients had been a serious problem in regard to bowel care; most had required strong cathartics and often the help of soapsuds, or milk and molasses enemas to produce evacuation. Bowel movements had been effectuated only through such measures. Our schedule had been the following: On the second day of constipation, a mixture of milk of magnesia and cascara was given routinely. If this did not cause relief, an enema of soapsuds or of milk and molasses was administered on the third day of constipation. In our cardiac patients, the cathartic mixture was not given as a rule; the enema alone being our method of treatment. It is evident that a tremendous amount of valuable nursing time was devoted to the administration of enemas.

When we began treatment with the new preparations described above, we started by giving Peri-Colace for three days, followed by Colace alone. However, as with other medications, for diverse conditions, we soon found that maximal benefit was, indeed, achieved only by individualized regimes.

Our initial plan gave us extremely variable results, ranging from no effect to diarrhea; therefore we altered our system of dosage and began administering a daily dose of four 100 mgms. Colace capsules plus one or two Peri-Colace capsules (100 mgms. Colace with 30 mgms. Peristim). The effects of this schedule were observed closely and during the second week, the dosage of

CHART II NUMBER OF BOWEL MOVEMENTS PER WEEK
AT FOURTEENTH WEEK OF COLACE/PERI-COLACE TREATMENT

AGE GROUPS	NUMBER OF PATIENTS	THREE OR MORE BOWEL MOVEMENTS PER WEEK ("NORMAL NUMBER")	PERCENTAGE	TWO BOWEL MOVEMENTS PER WEEK*	PERCENTAGE
60 to 69	7	6	86%	1	14%
70 to 79	12	11	92%	1	8%
80 to 89	10	8	80%	2	20%
90 and over	3	2	67%	1	33%
TOTAL	32	27	84%	5	16%

* No patient at fourteenth week had less than two bowel movements per week.

either Colace or Peri-Colace was adjusted. From time, to time, subsequent adjustments were necessary on the basis of an increased or decreased number of evacuations.

For example, in a patient with diabetes mellitus and rheumatoid arthritis, a dosage of two Colace and two Peri-Colace capsules daily resulted in passage of eleven formed bowel movements per week. We reduced this patient's daily dosage to three Colace alone and thereby established a single bowel movement each day. Another patient, a female diabetic having arteriosclerosis and a prolapsed uterus, had suffered from repeated fecal impactions. On a schedule of four Colace and two Peri-Colace capsules daily, she produced only two moderate evacuations per week. However, when her daily dosage was changed to three Peri-Colace alone, she had four full bowel movements week after week.

Discussion Originally, the patients considered in this study were arranged into two categories: (1) Those who had cerebral damage; and (2) Those who had no apparent damage to the brain. It was theorized that the defecatory reflex might be sluggish or even absent where brain damage had occurred. How-

ever, despite this preconceived notion, there was no significant difference in response to the new regimen in the two categories defined above. Good results were achieved without apparent relationship to diagnosis. (See Chart I)

The average age of patients in our series was close to seventy-eight years. Response at the oldest age (ninety-five) was not importantly different from that at the youngest age (sixty), and the dosage needed for effectual results did not appear to be influenced by the age factor within this range. We consider three or more full and formed bowel movements per week as normal, while two or less are insufficient, at least psychologically. With this criterion in mind, it may be noted that eighty-four percent of our patients achieved a normal number of bowel evacuations by use of Colace and Peri-Colace. (See Chart II)

Nine patients in our series of thirty-two had been subjected to episodes of hard fecal impactions; most of these had required manual breaking-up of the mass at least once a week. All of these nine patients were benefited by Colace and Peri-Colace to the point where none needed even the help of small enemas to start defecation. After the first week

of treatment with the new agents, it was never again necessary to break up impactions such as had troubled them previously.

In no case was the stool found to be inspissated after the first week of treatment with the new medications. Bowel movements were formed, soft, and expelled without damage or irritation to the rectum and without extrusion of hemorrhoids, even when the latter had

been a deterrent to the use of laxatives. At the end of the fourteenth week of this treatment, none of the patients in this sample required additional physical or medicinal help for bowel function.

We found that a limiting factor of Peri-Colace therapy was an occasional bout of diarrhea; however, this was well controlled when the amount of the drug was reduced.

Summary

The effects of two new preparations, Colace and Peri-Colace, for the treatment of constipation have been studied for fourteen weeks in a series of thirty-two elderly patients, aged sixty to ninety-five. All thirty-two patients, whose diagnosis included a variety of ailments, suffered from chronic constipation; nine were subjected to fecal impactions which required manual treatment. Experimentation proved necessary to arrive

at optimal dosage for each individual. After the first week of treatment, bowel movements were formed, soft, and expelled with no difficulties. At the end of fourteen weeks, no physical or other medicinal treatment was required for evacuation. Response at the oldest age was much the same as at the youngest age. An occasional bout of diarrhea resulting from Peri-Colace therapy was controlled when dosage was reduced.

Conclusion

In our experience, Colace (a stool softener) and Peri-Colace (stool softener plus cascara derivative) are

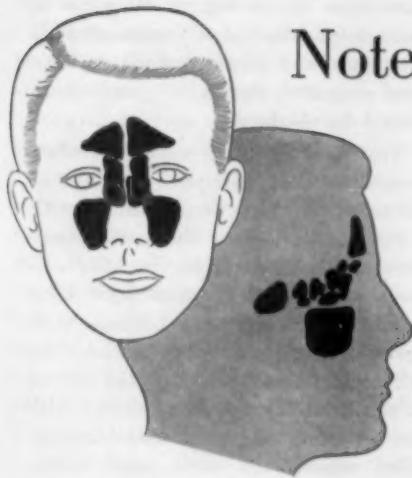
valuable agents for the regulation of fecal evacuation in chronically constipated aged patients.

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Pinehaven Sanitarium

MEDICAL TIMES



Notes on Sinusitis

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Doctor I have sinus." What a common introductory statement given by many patients to the otolaryngologist as the reason for consultation, and yet a large percentage of these same patients do not have sinusitis at all. Others, told they actually do have clinically significant sinus disease, balk at active therapy with anything more specific than nasal tampons and sprays because of the old wives tale, "Once a sinus, always a sinus," or "Once a sinus operation, always a sinus operation."

These misconceptions concerning sinusitis have developed through the years because of several factors, the least of which has not been faulty diagnosis and/or treatment by the physicians whom the patient had consulted. Headache problems, for example, oftentimes are very difficult and time consuming to evaluate. Unfortunately a diagnosis of sinusitis is frequently made without any facts to substantiate it, simply be-

cause it is so readily accepted by the patient and allows the physician to "get off the hook" without the laborious exacting history and examination required to find the true cause of the headache.

At times a true instance of sinusitis may be present but because contributing factors such as allergic rhinitis, septal deflections, or dental pathology are unrecognized and untreated, the sinus disease persist or recurs thereby adding fuel to the flame of ignorance surrounding the problem.

These erroneous ideas in the minds of the patients and in many physicians alike, at times make it difficult to treat the disease because of lack of the patient's cooperation. Common sense tells us that pus must be evacuated, that adequate drainage must be established and maintained, and that irreversible pathological changes must be eradicated if possible, along with any contributing deformity or disease. These principles apply to the sinuses as well as to the other areas of the body when infection exists.

Acute Sinusitis—The acute form of the disease is usually readily diagnosed and the treatment in the average instance is fairly well standardized. The onset of symptoms is associated with an acute

rhinitis either infectious or allergic and the patient suffers from malaise, nasal obstruction, discharge and pain. This pain is localized to the sinus involved in the case of the frontal and maxillary, and the former is characterized by a tendency to begin about 10:00 a.m. and to diminish in the early afternoon. Tenderness over these sinuses is usually a quite definite finding. Ethmoiditis may cause pain over the bridge of the nose and around the eyes while in sphenoiditis pain is referred to the vertex of the skull or to the temporal regions.

There may be edema and redness over the involved sinus or sinuses, and when it occurs it constitutes a real cause for alarm as it is indicative of beginning extension of the disease. However, because of the prompt use of antimicrobial agents, these findings are less frequently seen than in the past.

Examination of the nose reveals an edematous injected mucosa with swelling of the turbinates. After shrinkage of this mucosa with three percent ephedrine packing, a stream of pus can usually be seen about the orifice or orifices of the involved sinus or sinuses. The use of the Frazier nasal suction tip greatly facilitates the cleansing of the nose and the localization of these streams of pus. In the case of the frontal, anterior ethmoid, and maxillary sinuses, this exudate will be in the middle meatus and with the sphenoid and posterior ethmoid cells, the discharge will be into the nasopharynx. Choanal examination with a small mirror will localize this posterior stream of pus and help crystalize the diagnosis.

Transillumination of the antra is helpful but not exacting and should be used with that in mind.¹ The frontal

sinus varies so much in size that transillumination as an aid to diagnosis is quite unreliable. If doubt exists after all symptoms and physical findings have been evaluated, then x-ray examination should be obtained.

Treatment of acute sinusitis evolves around obtaining adequate drainage of the sinus and controlling infection with antimicrobial agents, the latter sometimes being used specifically after cultures and sensitivity tests have been performed. In obtaining drainage, it is necessary of course to shrink the edematous mucosa blocking the ostium of the sinus. This is accomplished with the use of three percent ephedrine applied strategically with nasal cotton probes. This shrinkage can be supplemented by the use of stock nose drops or sprays by the patient at his home. Occasionally it is necessary to infracture the middle turbinate to provide better drainage for the maxillary and frontal sinuses of that side. If the above therapy is not sufficient to relieve the symptoms, irradiation therapy may be beneficial in hastening recovery. If all conservative measures fail, and symptoms and physical findings persist, or become progressive, then external drainage of the involved sinus or sinuses becomes imperative. In the case of the frontal sinus, this drainage in the form of a trephine opening into the floor of the sinus may be sufficient.² After the trephine is constructed, a drain is inserted and left in place a few days until infection subsides, following which the drain is removed and the wound allowed to close. If a trephine opening is not successful in controlling the disease then a radical external frontal procedure is carried out. Fortunately the indications for the more radical surgery in acute frontal

sinusitis are rarely seen by the average practicing otolaryngologist.

The maxillary sinus is more easily accessible and can be drained and irrigated through the inferior meatus by means of puncture with an antral trocar, if symptoms do not abate in forty-eight to seventy-two hours of active conservative therapy. Acute ethmoiditis and sphenoiditis usually respond to therapy with shrinkage, gentle suction using a Proetz displacement bulb, or Brawley's bulb and the vigorous use of antimicrobial agents. In the instance of acute ethmoiditis, if symptoms persist and progress to orbital redness, edema, and possibly abscess, then external drainage is indicated. Acute ethmoiditis in children is often first seen when these orbital complications have developed, and in children this complication is more common than in adults. When external drainage is performed, the ethmoid cells and if necessary the sphenoid labyrinth, are surgically exposed and the diseased tissue removed.

After the acute phase of the sinusitis is under control and following a reasonable period of time in which to allow the disease process to become quiescent, contributing deformities and disease are eliminated. If there is a basic allergy present, this is controlled as much as possible. If there are septal deformities causing obstruction of the sinuses then these septal deformities are corrected. In the instance of children, hypertrophied adenoid tissue and infected tonsils are removed. The patient's living habits in reference to exposure to changes of temperature and weather should be examined, and changes made if possible to the exposure in order to prevent recurring upper respiratory infections. His general health should be

maintained at as high a level as possible, also to prevent recurring respiratory infections. It is advisable for these people to return to the physician for treatment before the complications of acute sinus disease develop, especially when they develop a cold which persists longer than the average time.

Chronic Sinusitis—Recurring, acute, sinus disease or chronic changes of the nasal and sinus mucosa secondary to allergy may produce chronic sinusitis. This can occur in children as well as adults, the ethmoids being clinically significant at birth and the maxillary at four years of age. The sphenoid sinus does not become significant until five to seven years of age and the frontal at thirteen to fourteen years of age. In children, recurring colds together with obstructive adenoid tissue may produce infection in the ethmoids and frequently the maxillary sinuses, and because of the inadequate ventilation and drainage of the nose secondary to this obstruction, the infection does not clear. The result is mucosal thickening and chronic suppuration. Polyposis in children is not common and usually the pathology is reversible in reference to the nasal mucosa.

Symptoms which should stimulate examination of the sinus are recurring or continuous colds, persistent wet nose requiring frequent blowing, nasal obstruction, persistent postnasal discharge, recurring otitis media, and recurring or chronic bronchitis. If a chronic bronchitis is present, then bronchiectasis should be kept in mind with both children and adults and, if necessary, a bronchoscopy and a bronchogram should be performed to determine the presence or absence of this disease. If bronchiectasis is present

a cycle is set up whereby the chronic chest condition infects the sinuses and the sinuses in turn infect the bronchial tree. Cooperation with the internist and chest surgeon is a necessity and active treatment of the pulmonary disease is carried out at the same time as that directed to the sinuses. Examination of the nose will reveal findings similar to those of acute disease except the mucosa will show evidence of chronic disease such as thickened mucosa, pale boggy turbinates, and polyposis if infection is long standing, or if the basic cause is allergic rhinitis. Transillumination of the antra may be helpful except in children, and as in the instance of acute sinus disease roentgenographic examination is of considerable value. The injection of radiopaque material such as lipiodol into the antrum will reveal the condition of the mucosal lining of the sinus and may help the surgeon to determine whether the disease is reversible.

A large percentage of patients first seen by the otolaryngologist present themselves with complete obstruction of both nasal fossae because of nasal polyposis. The history dates back for years and they have usually had several nasal polypectomy procedures in the interim with no attempt at the control of allergic manifestations, adequate sinus surgery, or the correction of septal deformities. X-ray examination frequently reveals pansinusitis. These are the patients who are more difficult to handle, because they are often discouraged and more or less resigned to their discomfort. On the other hand, they present themselves because of deafness, acute otitis media, acute exacerbation of their sinus disease or a chronic cough, and are usually con-

vinced when these complications occur, that thoroughness of examination and treatment both medically and surgically is to be preferred.

In the treatment of chronic sinusitis two groups of patients must be considered: children with sinusitis and adults with sinusitis. The child up to the early teens is a different problem because of difficulty in obtaining co-operation. Procedures which can be done under topical anesthesia with adults must necessarily be performed under general anesthesia with children, and a more vigorous approach initially is often undertaken because of this. If there is an allergic factor involved, specific control as with acute sinusitis with hyposensitization is usually indicated. However, in patients under the age of four or five years, an attempt is made to treat the allergy with antihistaminics, diet and environmental control. Over the age of four or five, allergy tests are conducted and if necessary hyposensitization regimes carried out. Nasopharyngeal obstruction secondary to hypertrophied adenoids is very frequently a prominent contributing cause of ethmoiditis or antral disease and with the removal of the adenoids the sinusitis will clear spontaneously. The child's general condition deteriorates with recurring tonsillitis. Removal of these tonsils improves the prognosis. The use of daily spot suction in the nose with curved metal suction tips in older children, or blind suction (Haskins) with a small rubber catheter passed through the nose into the nasopharynx in less cooperative patients, is very helpful and is supplemented by the use of antimicrobial agents and topical nose drop therapy.

The above outlined regime will pro-

duce good results in most instances of sinus disease up to the age group in which the maxillary sinuses become clinically significant, and at times will produce favorable results in this latter age group as well. If the nasal discharge persists however, and x-ray examination reveals cloudiness of one or both antra, then the child is anesthetized preferably with intubation anesthesia and the sinus examined by means of puncture and irrigation. If pus is obtained, then an antrameatal opening is constructed through the inferior meatus to provide ventilation, drainage, and access to the sinus for purposes of irrigation postoperatively. This last procedure is painless and is performed every four to six days until the returned fluid is clear.

Nasal polyposis sometimes will occur in children but is rare as previously stated. If polyps exist then they are removed in the usual manner under general anesthesia.

Treatment of chronic sinusitis in adults is largely surgical in one form or another.⁸ Chronic sphenoethmoiditis will respond at times to Proetz suction therapy using one-quarter percent ephedrine and applying suction with a Proetz bulb, while the patient closes the velopharyngeal opening by saying the letter "K" repeatedly. If polyposis has occurred because of long standing infection, allergy or both, then surgery is indicated. The "garden is weeded" so to speak by not only cutting the weeds (polyps) but by removing the roots as well (ethmoid cells). This latter procedure is called a sphenoethmoidectomy. Under proper premedication and using adequate topical anesthesia such as cocaine flake, the polyps and ethmoid cells are exenterated, and the diseased

tissue in the sphenoid also removed with this same intranasal approach. The turbinates are trimmed of their polypoid tissue. Allergic rhinitis is controlled by hyposensitization, topical sprays containing prednisolone, the use of anti-histamines and a daily intake of vitamin C in the therapeutic amounts. Post-operative observation and treatment are of utmost importance to the prognosis. The patient is examined at intervals, the frequency of which is determined by his progress, and if any residual or recurrent polyposis is seen it is handled by cautery with fifty percent trichloracetic acid, or removed with a Yankhauer ethmoid alligator forceps before it becomes obstructive. With this regime these patients can be assured of a future with much more comfort in reference to nasal difficulty and the complications which are associated with it.

Chronic maxillary sinusitis is often associated with nasal polyposis and sphenoethmoiditis and when the obstructive polyps are removed and the sphenoethmoiditis is corrected, the maxillary sinus may clear spontaneously. However, if nasal discharge persists after the above regime has been carried out, and the x-ray examination reveals maxillary opacity, then more active therapy is indicated. The alveolar ridge is examined for the presence or absence of an antraoral fistula and the patient is questioned concerning the possible association between the onset of his disease and a tooth extraction or a root abscess. If a fistula is found it must be closed surgically along with the therapy of the sinusitis which in this instance would consist of an antrameatal opening through the middle meatus. If the sinusitis is uncomplicated by the presence of a fistula, then an antral ir-

rigation is done to determine the activity of the disease. This irrigation is performed by puncture through the inferior meatus under five percent cyclaine topical anesthesia. If the returned fluid is clear, then the condition can be classified as inactive, and needs no further treatment, but if pus is obtained then the sinus is taking an active part in the nasal discharge and obstruction. All but a small percentage of these infected antra can be benefited by repeated irrigations at five to six day intervals providing of course that contributing factors such as an obstructive septal deformity, obstruction from the middle turbinates, allergy, or dental abnormalities are corrected. The prognosis for recovery can be quite closely determined by the character of the exudate in the washings.⁴ If this exudate is unorganized, then the infection is quite active and will require more irrigations to clear. If it is in a "glob" of mucoid material, then it is more dormant and will clear as a rule, in one or two irrigations. Also, the amount and character of this exudate in future irrigations will inform the surgeon as to his progress in coping with the disease. If after three irrigations, the return is unchanged from the original, then more active surgical intervention is probably indicated. In the few patients in whom the above therapy fails, and also in those individuals in whom new growths or an enlarging cyst are suspected, then surgical intervention is necessary. The injection of a radioopaque material into the sinus will disclose the presence of, and aid in identifying the nature of the disease therein. In uncomplicated chronic sinus disease, many surgeons prefer an inferior meatal approach into the sinus and the con-

struction of an antrameatal opening through this area. At the same time, polypoid material is removed from the antrum through this antrostomy opening. In those patients who have new growths, or who have a markedly degenerated, thickened, sinus mucosa, or who have expanding cysts of the antrum, the time honored Caldwell-Luc approach is the procedure of choice. Many otolaryngologists including myself, prefer this approach for the uncomplicated chronic maxillary sinus disease as well as with the more complicated forms, because it provides greater accessibility to the disease process, allows better visualization of this process, and permits the construction of the antrostomy under direct vision. The Caldwell-Luc operation is carried out with very little postoperative morbidity or disabling time loss, and because it allows a more thorough removal of diseased material, it provides the average patient with an excellent prognosis for cure of his disease.

Chronic frontal sinusitis is a more difficult problem because the diseased area is less accessible than the maxillary sinus previously described. Fortunately most of the patients suffering from this disease will clear if the sphenethmoid and maxillary disease is corrected. As with disease in other sinuses, the contributing factors previously discussed are also corrected, including infraction of the middle turbinate to provide better drainage into the nose. Spot suction with nasal suction tips to the sinus ostia, Proetz displacement therapy and gentle suction at intervals with Brawley's type suction bulb using about five pounds of pressure, will aid in establishing drainage. Gentle irrigations of the sinus, entering the frontal duct

where it opens into the hiatus semi-lunaris is sometimes successful, but should be done very gently and without traumatizing the mucosa of the duct in order to avoid edema and further obstruction. If considerable discharge persists, recurring acute exacerbations occur, or complications such as mucocoele, orbital abscess, osteomyelitis of the frontal bone, or intracranial disease exist, then external frontal sinus surgery is indicated.⁶ At the same time this is performed, the ethmoid and sphenoid sinuses are also surgically treated under direct vision through the external incision. There are several procedures available to the surgeon for radical frontal sinus surgery and the

procedure of choice depends upon the preference and training of the surgeon concerned. Essentially the important points to be remembered are as follows:

1. Successful surgery depends upon removal of all diseased tissue including necrotic bone.
2. Successful surgery depends upon the maintenance of a patent frontal duct into the nose.
3. Deformity of the frontal area (depression) can be avoided by preserving the anterior bony wall of the sinus and if this is not possible, can be corrected by the insertion of cancellous bone chips from the crest of the ilium.

Summary

1. A discussion of acute and chronic sinus disease is presented to acquaint the general practitioner with some of the misconceptions and facts concerning this common problem.

2. A plea is made toward more specific diagnosis and treatment in sinus problems. As with any other disease, the label "sinusitis" should not be at-

tached without the fact to hold it fast.

3. The prognosis for satisfactory control or cure is excellent when handled correctly and with proper regard to contributing allergy, nasal septal deformities, dental disease, nasopharyngeal obstruction, nasal polypsis, and bronchiectasis.

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Refractory Seborrhea Capitis

Treatment with Sarthonate Theraderm

There has been a recent relative increase in the incidence of seborrhea capitis, both in the male and the female.

The pathogenesis is believed to be related to disturbances of the function of the pilosebaceous apparatus. The associated causes are due to a combination of internal or constitutional variations, and contributing external or topical factors.

The internal causes are:

1. Hormonal imbalance;
2. Impaired metabolism and nutrition;
3. Dietary indiscretion—excessive carbohydrate and lipid intake.

The external causes are:

1. Biochemical changes of the cutaneous tissues of the scalp;
2. Increased number and activity of the resident bacterial and fungal flora;
3. The inflammatory reaction following the incautious use of topical irritants and sensitizers.

The hormonal imbalance is related to a disturbed physiological association of androgen to estrogen secretion, usually with a relative increase of androgen.

Impaired metabolism and nutrition are frequently associated with the decreased activity of the thyroid, and inability of the body to assimilate normally excessive carbohydrate and greasy food intake, particularly animal and saturated fats. The biochemical changes of the scalp tissue may be due to an altered pH, reduced cutaneous circulation, and the injurious effect of unsaturated lipids of sebaceous secretion resulting in damaging effects of the sulphydryl compounds of keratin with liberation of hydrogen peroxides.

In the normal genesis of the keratinization of the epidermis there occurs a progressive accumulation of a fine microscopic epidermal film, which is invisible. This process is continuous, unless disturbed by a constitutional imbalance with subsequent impaired keratinization when the accumulation of epidermal scales and debris becomes visible. This usually is manifested by the collection of white scales appearing on the shoulders and sleeves of the clothing following brushing or combing

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* This study was supported by a grant from Bristol-Myers, New York, New York Sarthonate and (Theraderm®) product of Bristol-Myers.

of the scalp. Usually with the increased production of these scales there is an accelerated growth of resident bacteria and fungi, such as *staphylococcus aureus* and *pityrosporum ovale*.

Occasionally, there appears simultaneously a folliculitis of the scalp, which is basically traumatic and due to intense scratching with resultant increase of the common bacteria residents of the scalp. Urinalysis in these patients do not demonstrate glycosuria.

The increase in seborrhea capitis is probably due to the incautious use of the thioglycollates, hair dyes, hair lacquers and the alkaline salts of the fatty acids used in detergent shampoos. The treatment of seborrhea capitis from time immemorial has been the empirical use of precipitated sulfur, resorcinol, salicylic acid, chloral hydrate and ammoniated mercury. More recently selenium sulphide, Vancide® and the quaternary amines have been introduced as therapeutic agents in the treatment of seborrhea capitis. The reported untoward reactions of the former compounds are increased oiliness, hair discoloration, reversible alopecia and contact eczematous dermatitis.

Slinger,³ Finnerty,⁴ and Lubowe,⁵ have previously reported respectively on the comparative effectiveness of a selenium sulfide suspension, a sulfur salicylic acid and hexachlorophene detergent combination; and a benzopyran formulation.

Ball⁶ has reported the beneficial results of Vancide 89 in combination with a quaternary amine in the treatment of seborrheic dermatitis of the scalp. Vancide has been used as an agricultural fungicide for many years.

After a careful study of the methods being utilized in the local treatment of

seborrhea capitis, it has been ascertained that there exists four methods of application and utility of antiseborrheic preparations.

1. The *pre-shampoo application* in which a detergent keratolytic is applied to the scalp and remains in situ for five to twenty minutes. The preparation is then removed by shampooing with neutral soap or detergent.

2. The *medicated shampoo* may contain active ingredients as sulfur, salicylic acid, resorcinol, hexachlorophene or bithionol dispersed in the shampoo. This medicated shampoo is applied and left on the scalp from five to thirty minutes. It is then removed by addition of water, producing active lathering of the previously applied shampoo, with subsequent removal of the medication.

3. The *antiseptic scalp lotion* may contain antiseptics and stimulants, as resorcinol monoacetate, chloral hydrate, tincture of capsicum, tincture of cantharides, Vancide and Sarthionate. These scalp lotions may also be used as hair dressings.

4. The *after shampoo rinse* is used on the scalp after completion of a shampoo. It is not washed out after the application. The rinse usually contains a quaternary ammonium compound, as benzalkonium chloride.

Lubowe¹ bacteriologically investigated forty-seven individual chemical compounds and formulations for possible use as topical antiseborrheic agents. One of the most effective compounds in this group was Sarthionate or bis-(lauryltrimethylammonium) - polythionate and tetradecylamine a-lauroylo sarcosine.

Neesby⁷ has demonstrated by radioisotope studies that the polythionates are absorbed in the sub-epidermal layer

when applied vigorously to the cutaneous tissues, particularly the scalp.

It was decided to actually determine the effectiveness of Sarthionate in the clinical and laboratory treatment of seborrhea capitis. Patients were selected who were clinically diagnosed as seborrheic capitis which was refractory to sulfur, resorcinol and selenium sulfide. The trial patients were advised to apply the Sarthionate solution to the scalp every other day, shampooing was performed once weekly with a mild neutral soap shampoo. Bacterial and fungal counts were calculated before, during and after cessation of treatment with the Sarthionate, to determine its effectiveness in the reduction of the actual number of colonies of resident organisms on the scalp.

Outline of Method The following laboratory method previously described by Lubowe and Botwinick² was followed:

1. A special designed plastic helmet was placed on the subject's head. Three openings measuring one square inch each, had previously been made in the helmet, one in each of the temporal regions and one in the occipital area.
2. Using a suitable closed curette the area exposed by the openings in the helmet, were scraped until the curette was filled. The length of time required to fill the curette was noted for each area.
3. The dandruff scales and skin scrapings removed with the curette were placed in 10 ml. Sabouraud broth. The broth was vigorously agitated for five minutes to secure a homogeneous suspension of the dandruff and skin scrapings in the broth.
4. 1.0 ml., 0.5 ml. and 0.1 ml. aliquots

of the broth suspension were placed in nutrient agar for a bacterial count of the area. 1.0 ml., and 0.1 ml. aliquots of the broth suspension were placed on the surface of Sabouraud dextrose agar to determine the fungal count.

5. 15 to 18 ml. of nutrient agar cooled to 43°C were used for the bacterial count and 15 to 18 ml. of Sabouraud dextrose agar were used for the fungi count. The plates were incubated at 37°C for forty-eight hours for the bacterial count and for seventy-two hours under ten percent carbon dioxide for the fungal count.
6. Bacterial and fungal counts were made using an improved Quebec colony counter. Multiply counts by ten to secure total counts for 1 ml. aliquot, by twenty for 0.5 ml. aliquot and by 100 for 0.1 ml. aliquot.

The percent reduction of bacteria on the scalp after using the lotion in five subjects for fourteen days was as follows:

Right temporal area	59%
Left temporal area	57%
Occipital area	61%

The percent reduction of fungi after using the lotion in five subjects for fourteen days was as follows:

Right temporal area	82%
Left temporal area	88%
Occipital area	87%

The previous studies have indicated that the prominent bacteria are usually *Staphylococcus aureus* and the prominent fungi are *Pityrosporum ovale*.

Simultaneously, the patients were observed clinically to ascertain the subjective and objective relief of dandruff, itching and infection.

After confirming the bactericidal and fungicidal effectiveness of Sarthionate

in five patients having seborrhea capitis, it was then deemed advisable to clinically evaluate this compound in the treatment of clinical cases of refractory seborrhea capitis. Of one hundred sixteen patients having seborrhea capitis who were observed in an eight month period, eighty-two patients gave a history of a long duration and non-relief following the use of prescribed or self-medicated.

Scalp Remedies The number of patients treated in this clinical trial were eighty-two in number, fifty-eight were male and twenty-four female. The age groups were as follows: 12 to 20 (10), 21 to 30 (28), 31 to 40 (32) and 41 and over (12). The method of application that was followed was to use the Sarthionate preparation, once daily on the scalp for the first week, then every other day for the next week, and finally, as a pre-shampoo treatment, twice weekly. In the latter procedure, the preparation is rubbed into the scalp in the morning, and then the scalp is shampooed at night with a mild neutral soap shampoo thereby cleaning out the Sarthionate.

In eighty-four percent of the cases, the relief of scaling and itching was good to excellent. In twelve percent, the results were fair indicated by the fact that the itching and scaling was markedly improved but had not completely disappeared. In four percent, there was no subjective or objective improvement noted. In two of the patients slight tenderness was noted following daily use.

However, we believe this symptom is probably related to too strenuous an application. There was no evidence of any untoward reactions noted with continuous use.

Clinical trials demonstrated that Sarthionate (Theraderm) is a pleasant preparation to use, does not cause any increased oiliness of the scalp, discoloration of the hair. There was no case of contact dermatitis observed in this study.

Many of the women patients discovered that the preparation brought out the highlights of the hair. Eight of the patients with seborrhea oleosa demonstrated reduction of oiliness, suggesting its use in seborrhea oleosa.

Conclusions

Sarthionate, when used as a therapeutic and pre-shampoo type of scalp application was completely effective in 84% of the patients with refractory seborrhea capitis; moderately effective in 12% and not effective in 4%.

The untoward reactions noticed were mild discomfort of the scalp in

two patients when the preparation was rubbed in too vigorously.

The continuous use of sarthionate produced no decrease in its therapeutic activity.

This study has continued for eight months without any evidence of dermatitis venenata of the scalp or adjacent cutaneous tissues.

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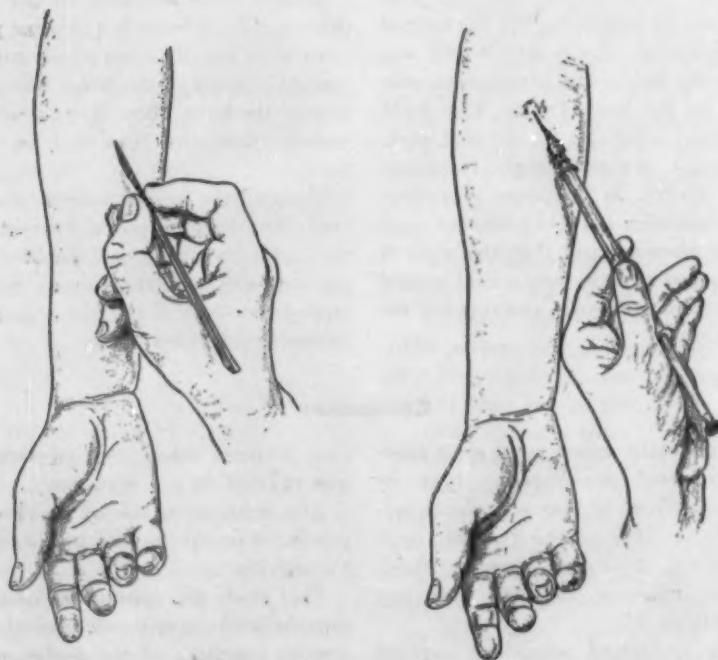
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Clini-Clipping

Technic of Skin Test



A. (left) Cutaneous scratch method. The scratch is made on the forearm with a cataract knife. B. (right) Intracutaneous methods. A tuberculin syringe with a 27 gauge needle is used. The point of the needle goes into the skin.



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The General Practitioner and Mental Disorders

At present, many more patients are seeking medical attention from the General Practitioner than he can possibly attend. He tends to give priority to those with physical disturbances. He has frequently been oriented to consider mental disorders of minor concern or else untreatable.¹ He needs to reappraise his medical point of view and his selection of patients since the pathology of behavior is now being described in a scientific manner without the use of hidden mechanisms and without reference to mythology.² A more definite physiological approach is now being used.² Genetic studies seem to indicate that many diseases are due to abnormal molecular structure caused by

faulty protein synthesis,³ which in turn is due to inheritance of an abnormal gene. Medical education is becoming more orientated towards the ill person rather than toward disease entities.⁴ The general practitioner is the key figure in early detection of mental disorders, and he should recognize his position.

The general practitioner realizes the importance and effectiveness of prevention of communicable diseases by insisting on adequate and early immunization. He can be equally effective in prophylaxis of mental disorders. Clinical observation and critical evaluation has shown that the child who suffers early emotional deprivation may be seriously deformed in personality struc-

ture.⁵ The physician is often very perplexed to find that the child whom he hospitalized fails to thrive there. The dietary, sanitary, and contagious problems are well controlled. The infant, however, becomes listless, fails to gain weight, though the diet is well balanced and adequate. It sleeps poorly, becomes unresponsive, and appears very unhappy. This clinical syndrome of emotional deprivation is caused by the lack of sensory stimulation through inadequate mothering. This same condition can arise when the child is placed in an institution because the mother is deceased, or for other reasons. It can even arise when the biological mother is physically present but fails to provide warm emotional relationships and support. This occurs when the mother's emotional needs are not gratified, as for instance in mothers who are unwed, or divorced. It frequently occurs in homes where there is no economic privation. The child actually becomes "The poor little rich child."

The practitioner recognizes the causative relationship between streptococcal sore throat, and rheumatic carditis, leading progressively to more severe and more prolonged periods of physical incapacity. The causative relationship between early emotional deprivation, character disorders with emotional inadequacy and behavior patterns which are socially unacceptable, has likewise been established. Emotional deprivation in children has not only immediate but also severe remote effects. The personality remains infantile. The child uses temper tantrums, kicking and screaming as reactions to frustration. Motor patterns are poor. These children are unable to identify themselves with others. Their behavior patterns are atten-

tion seeking and lack warmth. Behavior is impulsive, unpatterned, and scarcely modified by discipline or punishment. This is a grim picture and a very serious problem. Treatment is difficult and unrewarding once the full picture has developed. Prevention is essential. Here, the general practitioner is in a key position. He may need and if so, should seek help from a reliable child psychiatrist.

The general practitioner is in a most enviable position for detecting another rather common childhood disturbance, namely, brain damage.⁶ The management of these children is a problem and worry to anguished parents. In school, these children often make things miserable for the teacher and the other pupils. The recognition and evaluation of brain damage is of prime importance. It will prevent or at least ameliorate the secondary emotional reaction of the child to the growing awareness of his organically determined inadequacies. The general practitioner often is the only person who has the knowledge needed to differentiate this disorder. He very likely attended the mother prenatally and is aware of the complications which developed. He knows about the birth trauma, feeding problems, the unexplained bouts of high fever, the delay in motor development and the poor muscle coordination of the child. He observed that the child needed help and support for a much longer period than other children. An awareness of such a history is of far more aid in detecting this disorder than the reflex hammer or the electroencephalogram.

The symptoms of brain damage are fairly uniform whatever the etiology. There is hypermotility, often described as organic "driveness," emotional ex-

plosiveness, impulsiveness, short attention span, and difficulty in adapting to any structured situation. These children become disturbed very easily. Their scholastic performance is likely to be poor. There often is difficulty in learning to read. Almost all of these children have difficulty with arithmetic. Many have visual defects and oculomotor incoordination. All show anxiety. Punishing or demanding unattainable goals is adding insult to injury. An accurate diagnosis must be made. The anxiety must be relieved to the level where the child and the parents feel comfortable. The practitioner must not appease the parents with a noncommittal reassurance that the child will outgrow his difficulties. The environment must be structured to meet the child's capacity. His personality must be respected and his dignity preserved.

Disturbed behavior patterns quite similar to that of brain damage are often shown by children with reading retardation or other learning problems. Here, too, the reflex hammer and the electroencephalogram are of little aid. The Binet test can be very misleading. These children are often classed as backward and retarded. When the practitioner examines these children he finds that in motor skills and in their fund of general knowledge they are fully equal to children of their age group. Recognition of this disorder often relieves worried parents. For treatment the practitioner should refer the child to the proper specialist.

The convulsive disorders present a real challenge to the practitioner. The illness is considered a rarity because it is often not recognized. A fairly accurate incidence is one in one hundred and seventy persons. Many practitioners

prescribe barbiturates empirically which is often effective treatment for epilepsy. A closer study of these cases is often most rewarding. It enables the practitioner to develop a physiological approach, which has been so rewarding in cardiovascular, digestive, and urinary disorders.⁷

Not only can the practitioner assume a key role in the diagnoses of mental disorders in children, but equally well in adults. Here he encounters the neurosis. His position is the envy of every psychiatrist. He is able to obtain a longitudinal history par excellence. He can observe the behavior pattern of his patient and evaluate the defense mechanisms which are used. He has knowledge of the inter-personal relationships in the patient's family, in his church and lodge. He knows how the patient is accepted in the community. He knows his patient's credit rating, the kind of car he drives, and how he drives. All these behavior expressions of which the patient himself is usually quite unaware are very revealing. The emphasis the patient places on somatic complaints while the practitioner is trying to obtain a history is often diagnostic. It is indeed a skillful practitioner who is able to determine how those somatisations should be treated. In many instances it is better to let the patient anchor his anxiety in a socially-accepted manner by having a headache, a cardiac, or gastric neurosis, than to have it become free floating. He can now also reduce the anxiety by the judicious use of tranquilizers.

The practitioner should be aware that, for patients with depression, for those who are suicidal, and those who refuse to eat, electroshock therapy is almost specific.⁸ The response is often

truly amazing. This treatment should be available in general hospitals. Vallee⁹ has shown metabolic changes, especially in copper levels following electro-shock treatment.

The practitioner can also render yeoman's service in the diagnosis of psychotic patients. A very large number of these are schizophrenic. The etiological factor here is considered to be an inherited biochemical, metabolic error.^{10, 11} These patients usually have bizarre complaints often referable to the gastro-intestinal or genito-urinary tract although any part of the body may be involved. In describing their symptoms they show a peculiar coldness, detachment and aloofness, quite in contrast to the psychoneurotic. There is a certain inappropriateness in their emotional tone. The history reveals invariably an inadequate adjustment, in varying degree, in their marital, social and industrial relationships.

The practitioner has been trained in cardiology to make a diagnosis as to functional capacity. He places his patient in one of four categories. He can do likewise with the patient with schizophrenia. Class I would include those who make a relatively satisfactory, marital, social, and industrial adjustment. Class II would include those who have been divorced or separated one or more times. They quit good jobs for unrealistic reasons and repeat this several times, interspersed with periods of unemployment. Their interpersonal relationships in family, church and community are often markedly impaired. Antisocial acts often precipitate hospitalization. Class III includes patients who require hospitalization for extended periods of time, and patients in Class IV require continuous hospitalization. The practitioner can help patients in Class II and III by the proper use of the "tranquilizing" drugs.

Summary

The General Practitioner has a key role particularly in the diagnosis, but also in the treatment of mental disorders. He must recognize the etiologic factors in disorders of behavior in children.

Epilepsy must be considered a

common rather than a rare disease. The general practitioner can render invaluable service in the early recognition of depressions, neuroses and psychoses. It is his responsibility to provide for adequate treatment.

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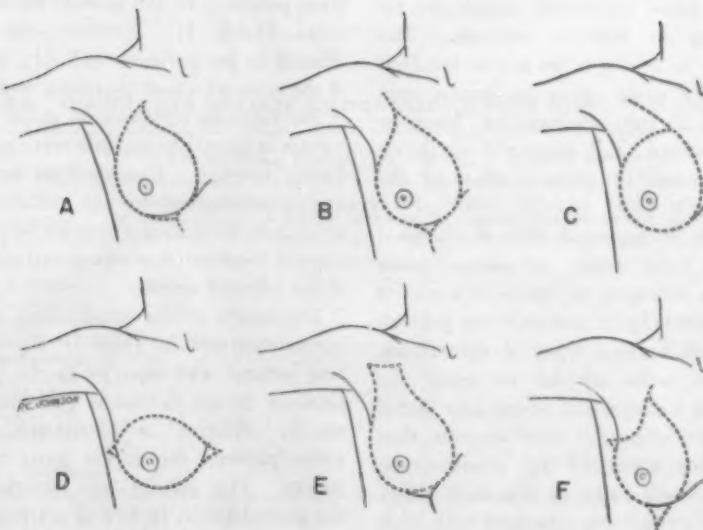
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Veterans Administration Hospital

Clini-Clipping

Incisions for Radical Mastectomy

A. Halsted	D. Orr
B. Meyer	E. Greenough
C. Kocher	F. Stewart



Prednisolone Aerosol

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Topical application of prednisolone, in the form of creams or ointments, has become a standard method of therapy in certain dermatoses. A new vehicle for topical prednisolone administration* has been introduced for use in those indications which are responsive to exterior steroids. The aerosol is available in a one hundred and fifty gram spray applicator containing 50 mg. prednisolone, freon as a propellant, and isopropyl myristate to overcome the drying effect of the freon.

Since it appeared that the aerosol might have some advantages over creams, ointments, or lotions, it was used experimentally in seventy-three patients who had various types of dermatoses. Patients were advised to apply the spray at a distance of about four inches from the lesion for three seconds, thus delivering about 0.5 mg. prednisolone, several times daily. In this study, Meti-Derm® aerosol was compared with other forms of therapy on paired lesions in

the same patient. A cream containing equivalent amounts of prednisolone was used by thirty-nine of the patients and six used a lotion with phenol.

Prednisolone aerosol produced excellent or good results in sixty-one (eighty-three percent) of the seventy-three patients (Table I). Lesions were unaffected in ten patients, including seven of the nine who had psoriasis, and one of the eighteen instances of atopic dermatitis appeared to become more severe during therapy. Prednisolone aerosol was unsatisfactory in one instance of seborrheic dermatitis where therapy was stopped because of cracking and drying of the affected areas.

The results of our comparative study are summarized in Table II. Prednisolone aerosol was superior to the prednisolone cream in eleven patients and equally effective in twenty-one. In seven patients the cream gave better results. The aerosol was superior to the phenol lotion in five of six patients who were treated with both.

Prednisolone aerosol seems, in general, to be superior to other forms of topical therapy. The cooling effect of the freon enhances the anti-inflamma-

* Clinical research supplies of Meti-Derm Aerosol were provided by G. Kenneth Hawkins, M.D. of the Division of Clinical Research, Schering Corporation, Bloomfield, New Jersey.

TABLE I RESULTS WITH PREDNISOLONE AEROSOL

INDICATION	NUMBER OF CASES	EXCELLENT	GOOD	NO EFFECT	WORSE
Acne, Excoriative	1	—	1	—	—
Dermatitis, Atopic	18	6	11	—	1
Dermatitis, Herpetiformis	1	—	1	—	—
Dermatitis Infectiosa Eczematoides	6	2	3	1	—
Dermatitis, Stasis	3	—	3	—	—
Dermatitis Venenata	15	9	6	—	—
Eczema Nummulaire	9	—	8	1	—
Erythema Multiforme	1	—	—	—	—
Herpes Zoster	1	—	—	—	—
Lichen Planus	1	—	—	1	—
Lichen Simplex Chronicus	6	—	6	—	—
Psoriasis	9	—	2	7	—
Seborrheic Dermatitis	2	—	1	—	1
SUMMARY	73	19 (26%)	42 (57%)	10 (14%)	2 (3%)

TABLE II COMPARISON OF PREDNISOLONE AEROSOL WITH OTHER THERAPIES

INDICATION	Prednisolone Cream				Phenol Lotion			
	NUMBER OF CASES	AEROSOL SUPERIOR	SAME AEROSOL EFFECT	AEROSOL INFERIOR	NUMBER OF CASES	AEROSOL SUPERIOR	SAME AEROSOL EFFECT	AEROSOL INFERIOR
Acne, Excoriative	1	—	1	—				
Dermatitis, Atopic	16	5	9	2				
Dermatitis Infectiosa Eczematoides	3	1	1	1	1	1	—	—
Dermatitis, Stasis	1	—	—	—				
Dermatitis Venenata	6	3	2	—	1	1	—	—
Eczema Nummulaire	5	1	3	1	3	3	—	—
Herpes Zoster	1	1	—	—	1	—	—	1
Lichen Planus								
Lichen Simplex Chronicus	4	—	4	—				
Seborrheic Dermatitis	2	—	1	1				
SUMMARY	39	11 (28%)	21 (54%)	7 (18%)	6	5 (83%)	—	1 (17%)

tory and antipruritic action of prednisolone. Patients liked the aerosol because it is easy to apply and is cosmetically acceptable. The only disadvantage is that material is wasted if the spray is

used incorrectly. However, as soon as patients learn to apply it properly, in short bursts close to the skin, Prednisolone aerosol is no less efficient than creams or ointments.

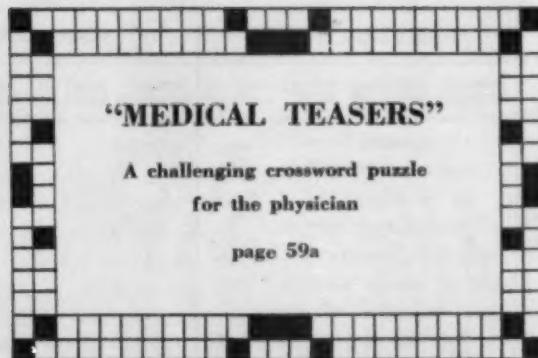
Summary

Prednisolone aerosol in the form of Meti-Derm® aerosol was used in seventy-three patients with dermatoses, producing good or excellent results in sixty-one. It was compared with a prednisolone cream in thirty-nine of these patients and found to give equal or superior results in thirty-two; also, the aerosol was superior to a phenol

lotion in five of the six patients who received both.

Prednisolone aerosol is a new vehicle of topical steroid therapy which has certain advantages over creams and lotions in the treatment of dermatoses.

851 Avenue C



Report on a Fatal Case of Probable Fulminating Typhoid Fever

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Centralia, Illinois

Typhoid Fever is considered to be an acute generalized disease caused by *Salmonella Typhosa* or *Typhoid Bacillus*. Since 1900 a marked decline of the disease has prevailed because of prophylactic vaccination and rigid rules of sanitation. It is considered a preventable disease because of the discovery and recognition of other similar diseases which at one time were diagnosed as typhoid fever.

The following illustrates an atypical instance of probable typhoid fever in which the symptoms were fulminating in character, resulting in death and in which the probable diagnosis was made by post-mortem.

R. S., a 10-year-old white male who had been given a pre-school physical examination two days prior to his last

illness, and who was found to be in apparent good health. He awakened on or about 8:30 a.m. August 23, 1957 complaining of nausea which was followed by five or six episodes of vomiting. His mother reported that his temperature was 101°F. About one hour after the onset of nausea and vomiting he developed a headache which was followed by a severe diarrhea of fifteen to twenty loose stools which had a foul odor. He continued to have intermittent spells of vomiting and developed abdominal pain. He was examined approximately three and one half hours after the onset of his illness. After examination Kaopectate® and Neomycin were prescribed for his diarrhea and aspirin for his fever. He was given 600,000 units of penicillin intramuscularly and 15 mgms. of Thorazine by injection to control the vomiting. At that time his temperature was 103°F. He apparently did well the rest of the day and sat up in bed and watched a baseball game to completion on television as well as several other programs during the evening. There were no further episodes of vomiting or diarrhea. He slept from 9 p.m. until 5 a.m. the following morning when he awakened with a loud scream as though he had had a nightmare. He screamed out, "Dad, lay down in bed before the arrows hit you." At 6 a.m. he drank a cup of tea and remarked how good it tasted. At 8:30 a.m. his temperature was 103.6°F; he became delirious, stuporous, and picked aimlessly at the bedclothes. He vomited profusely; had diarrhea, and became dyspneic. He was hospitalized immediately. Oxygen was administered to the patient while on his way to the hospital in an ambulance. He arrived at the hospital at 8:45 a.m. and as he

was placed on the elevator he became markedly cyanotic. He was placed under the oxygen tent; Coramine® was given by injection, and artificial respiration was begun.

Physical examination on admission to the hospital revealed a well developed, well nourished, asthenic white male appearing approximately his stated age of ten years. He was critically and acutely ill, delirious, and presented a picture of prostration. His color was ashen gray; cheeks flushed, his facies anxious, his nares pinched, he had bilateral conjunctivitis, a "glassy" stare in his eyes, slight injection of mucous membrane of his throat; numerous coarse rales scattered over both lung fields anteriorly, shallow breathing, cyanosis, and abdominal distention.

He was pronounced dead at 9 a.m. Permission for an autopsy was granted by his parents.

The following post mortem findings were noted on gross examination: "In the axillary and inguinal areas bilaterally are noted nodes which measure up to 1.5 cm. in maximal dimension. Rigor mortis is 2 + though no livor mortis is seen. The body has been previously embalmed arterially."

Lungs: "The lungs weigh approximately 250 g. each. The external surfaces present a grayish-tan color with some focal areas of yellowish and greenish discoloration. The tracheobronchial tree generally is not remarkable except for minimal diffuse reddening of the mucosa. The pulmonary artery and its radicals are not remarkable. On sectioning the lungs there are noted particularly in the hilar areas extending out into the areas of the pleura, areas of slight dry consolidation of a grayish-green color. Examination of

the hilar lymph nodes discloses them to measure up to 1.5 cms. in thickness and to be of a reddish brown color with some lobulation.

Microscopic examination of the lungs discloses a completely normal histology in most areas except for moderate vascular congestion at all levels. In addition there is some slight mononuclear cell aggregation peri-bronchially, including occasional eosinophils. In addition, in some focal areas there is noted rather marked interstitial thickening of the alveolar septae by a mononuclear cell infiltration. Some focal linear fibrosis is also noted overlying the mononuclear cell infiltration. A few focal fibrous nodules are noted of a small size, generally at the three ends of the alveolar septae. The mononuclear cells involved are generally of a rather large size with large vesicular nuclei. . . ."

The liver on gross examination was slightly to moderately enlarged and presents externally a tannish yellow appearance with some mottling. The sectioned surface is of a bluish red appearance with a few focal areas of lighter reddish tan discoloration which are poorly defined. Otherwise no focal abnormalities are seen.

On microscopic examination there is some parenchymatous degeneration of the parenchymal cells in all areas. A few of the portal areas exhibit some large mononuclear cell infiltration. In addition, very sparsely scattered throughout the parenchyma may be noted focal aggregations of rather large mononuclear cells, some of which also include a few polymorphonuclear cells. . . . In some of the areas of mononuclear cell aggregation there is suggestive, but not quite definite, necrosis of the adjacent parenchymal cells. . . . In other

sections there is some rather definite central zonular sinusoidal dilatation accompanied by some focal serous hepatitis. In one section also one of the larger bile ducts exhibits some polymorphonuclear cell infiltration extending up through the epithelium."

The spleen exhibited moderate to marked enlargement extending down to 4 in. below the left costal margin. The spleen externally is rather firm in consistency and the serosal surface is of a reddish-blue color and smooth. On sectioning the sectioned surface is of greater than usual diffuseness, though again, rather firm in consistency. The sectioned surface is a grayish-red color and is noted to be composed of numerous confluent nodular areas which measure up to 2 to 3 mm. in diameter.

Microscopic section of the spleen revealed the splenic parenchyma is of a rather loose appearance. The sinusoids exhibit rather marked dilatation and there is some generalized mononuclear cell proliferation within the red pulp. The follicles are also rather striking, being of unusually large size, primarily by enlargement of the germinal centers. The reticulum cells in the germinal centers exhibit rather marked proliferative activity and many of them contain phagocytosed debris including erythrocytes, nuclear material and some basophilic bodies which appear to be lymphocyte nuclei. There is some increase in the polymorphonuclear cells within the sinusoids. . . . However, no areas of true necrosis may be identified."

The gastrointestinal tract: "The mucosa of the jejunum and ileum presents a rather brilliant tan appearance. However, the terminal portions of the ileum may be noted to vary from 1 cm. to 4

cm. in length. No true mucosal defect or ulceration is seen. On microscopic section passing into the duodenum there is noted some increase in lymphoid tissue within the mucosa, both within the deeper portions and within Brunner's glands. In addition, in one area of the duodenum there is noted some focal necrosis within Brunner's glands, heavily infiltrated by polymorphonuclear cells both interstitially and within the lumina. There is a very marked reticular hyperplasia within the lymphoid follicles spilling out into the surrounding external lymphoid sinusoids. However, though there is some desquamation of the epithelial cells overlying these follicles, no true ulceration or acute inflammatory reaction is seen. The germinal centers of these follicles are characterized by numerous large reticulum cells exhibiting considerable proliferative activity and containing phagocytosed within their cytoplasm, considerable nuclear debris, erythrocytes and some larger basophilic rounded structures resembling lymphocyte nuclei. Examination of the colon shows only some very slight reticular and lymphoid hyperplasia of the lymphoid tissue therein. No ulceration is present.

The mesenteric peri-aortic and hilar lymph nodes exhibit rather marked enlargement varying from 8 mm. to 3 cm. in maximal dimension. These present a slightly lobulated tan to bluish red appearance on sectioning. Microscopic section revealed: The mesenteric lymph nodes disclose rather marked reticular hyperplasia accompanied by some lymphoid hyperplasia. The medullary sinusoids are also dilated and exhibit a marked mononuclear cell hyperplasia. Within some of the subcapsular lym-

phoid follicles there are noted smudgy areas of necrosis within the germinal follicles. Very little polymorphonuclear cell infiltration is seen in any area.

Autopsy disclosed a non-specific though highly suggestive combination of pathologic alterations, the interpretation of which, unfortunately, could not be positively confirmed because of previous embalming procedures which likely led to lack of success in identifying conclusively the etiologic agent. Though the clinical course is not that usually seen, the autopsy findings strongly suggest a diagnosis of typhoid fever, both grossly and microscopically.

The pathologic process concerned is that of a chiefly mononuclear cell response in a clinically fulminating disease. Such a cellular response would tend to exclude, though not conclusively, the more common fulminating Gram positive bacterial septicemia. In addition, no true granuloma formation or epithelial cell transformation is observed, thus rendering tuberculous or fungal infections less likely, as do the negative results of acid fast and Gridley stains. On the other hand, there is present a prominent reticular cell hyperplasia without epitheloid cell transformation, which is most marked, grossly and microscopically in the gastrointestinal tract and its draining lymphatic tissues. In addition, lymphophagocytosis in the lymphoid tissue and focal hepatic micronecrosis are seen, both of which are characteristic, though not diagnostic, of typhoid fever.

Thus, despite the non-characteristic clinical picture, a pathologic diagnosis of probable typhoid fever must be rendered, though embalming has rendered its confirmation impossible. In addition, most of the other unlikely clinical

diagnosis are equally unlikely from a pathological standpoint, and most of those which are possibly more typical of the clinical picture may be excluded from pathological consideration.

Swab cultures were taken of the contents of the small intestines and of the colon. They were reported as showing members of the *Salmonella* group, unidentified. The patient had visited two farms within ten days prior to the onset of his illness. Samples of well water from each of these farms were reported as being "unsatisfactory for drinking" and as containing "bacteria indicative of pollution" according to health laboratory studies. No carriers were found, nor were there any barns or privies in the immediate vicinity of the wells.

Final Anatomical Diagnosis:

1. Acute infectious disease, probably due to *Salmonella typhosa*.
 - A. Reticular hyperplasia and lymphophagocytosis of splenic and lymphoid tissue, including that of gastrointestinal tract, marked.
 1. Serosanguinous ascites, minimal.
 - B. Focal micro-necrosis of liver, minimal.
 - C. Focal interstitial pneumonitis.
 - D. Subendocardial interstitial myocarditis, minimal.
 - E. Acute cholangitis, minimal.
 - F. Hyperplasia of bone marrow, moderate-marked.
 - G. Lipoid depletion of adrenal glands, marked.

Summary

1. *A fatal case of probable fulminating Typhoid Fever in which the*

final diagnosis was made by autopsy study has been presented.

2. The importance of obtaining a good history cannot be over emphasized.

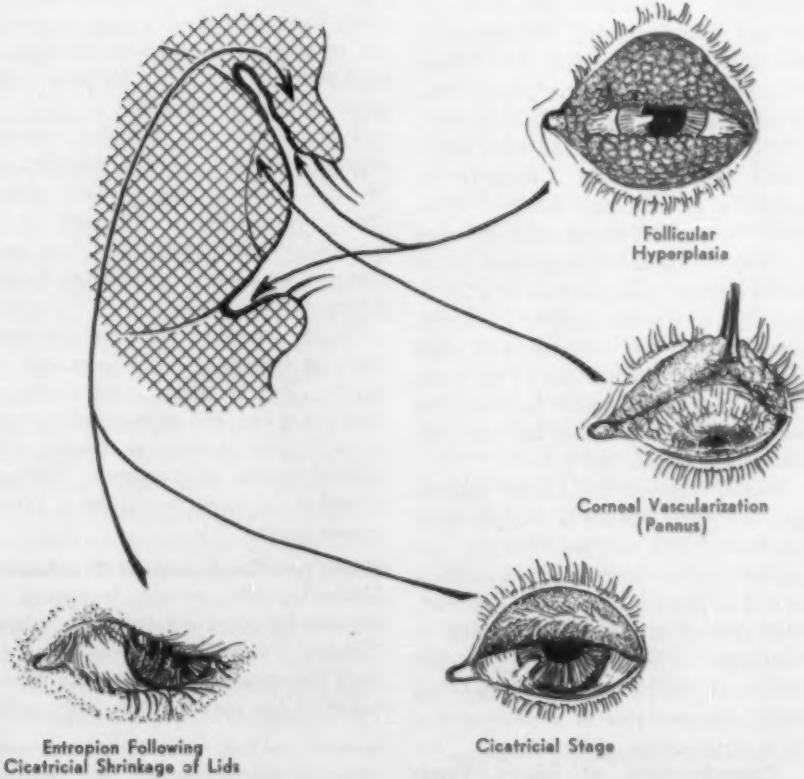
3. Sincere effort should be exerted

by the attending physician to obtain autopsy permission especially when the final diagnosis of a deceased patient is in doubt.

1152 East Broadway

Clini-Clipping

TRACHOMA



Psycho-Physical Treatment of Chronic Leg Ulcers

This preliminary report presents clinical observations on a new technique for the treatment of chronic leg ulcers. It deals with both the physical and psychic factors. The success of this limited study suggests that further investigations employing a larger series of patients might be very fruitful.

It is becoming more and more established, that the mental attitude of the patient is an important factor in treatment. In contradistinction to all other species, the human is motivated in his entire economy and function by cerebration. He is also an ambulatory being. Any condition that will materially affect his ambulation, or the use of his lower extremities, will greatly interfere not only with his ambulation, but also with his state of mind.

Hence, "Chronic Leg Ulcers" appears as a syndrome, but not as a single physical entity. The treatment of the syndrome implies, therefore, a psychogenic as well as physical or material approach. This altered attitude prompted this investigation of psycho-physical treatment of chronic leg ulcers in a series of patients representative of a cross section of a metropolitan community.

Classification of Ulcer Types
Observed in the present series were

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thirty-five patients, of both sexes, ranging in age from thirty-seven to eighty-nine years of age. They included both negro and white patients.

Types of patients included arteriosclerotic, traumatic, anemic, tuberculous, mycotic, diabetic, and varicose ulcers "of long standing." All were characterized by fibrosis of the base and margins, and scanty granulation tissue, odors, and discharge.

On the record chart, notations were made of the sex, type of ulcer, age of patient, size of ulcer, local treatment used (if it included varicose vein injections in case of varicose ulcers), and clinical results of treatment. Therapy extended, in most cases, for a three-month period.

Basis for Psychological Treatment. Clinically, the patient harboring a chronic leg ulcer constantly complains "Doctor, I can't sleep; I can't walk; I can't get around to do my work on account of the pain." While local condi-

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tion and treatment must be considered, the mental state and comfort of the patient are paramount in the process of rehabilitation.

Basis for Physical Treatment. We have always been interested in the state of circulation in the lower limbs which are affected. An adequate blood supply to cleanse and nourish simultaneously the tissues is imperative. This means that there must be adequate local circulation and the elimination of stasis. One of the most stubborn and discouraging types of ulcers to treat is the arteriosclerotic ulcer, which persist either due to a lack of circulation locally, or to a spastic condition of the blood vessels in the affected area. The failure of proper blood supply to reach an ulceration, or a spasm of local blood vessels will invariably cause local ulcer pain. This pain-spasm-pain cycle causes the patient to be constantly tense and in a state of perpetual anxiety. It may be empirically stated that such anxiety causes vasoconstriction and that a poor blood supply to a part retards healing. Collens and Wilensky in a discussion of the medical methods of treatment of peripheral artery disease, suggest methods for the elimination of spasm-producing substances and the use of vasodilating agents to increase the blood supply.² **Secondary Infection.** Finally, the problem of secondary infection always complicates the healing process in ulceration. Cultures taken usually reveal a predominating secondary invader which must be eliminated before any chronic leg ulcer will heal.

Materials and Methods Any agent that reduces the state of spasm of local blood vessels and brings more blood to the ulcer area should enable the lesion to heal more quickly and more effec-

tively. If this agent could be combined with a bacteriostatic or bactericidal agent, a good method might be obtained with which to treat chronic leg ulcers.

To meet this criterion, we employed an ointment containing twenty percent dissolved benzocaine with five mg. neomycin sulfate per gram, in a bland water-soluble base.*

Extensive reports in medical literature attest to the effectiveness of a twenty percent dissolved benzocaine ointment in relieving surface pain and itching. Schmitz, Smith and Carberry found it superior to two other widely used topical anesthetics for alleviation of pain in hemorrhoids, post-episiotomies, and fissured nipples.² Tainter and Winter described benzocaine as the "best topical anesthetic."³ White and Madura, in a study of one hundred and thirty-two instances of various dermatological conditions, found the twenty percent benzocaine ointment effective in one hundred and twenty-eight patients in relieving pruritus.⁴ And Adriani, in evaluating toxicity of various topical, anesthetic agents, concluded that benzocaine was least toxic.⁵ Lack of both toxicity and sensitivity was further reported by Adriani in a report on the use of the twenty percent benzocaine ointment as a topical anesthetic for use as a lubricant for intratracheal catheters and for pharyngeal and nasal airways.⁶

It has been demonstrated that the twenty percent dissolved benzocaine ointment, when applied locally to unbroken skin, resulted in an increase in the diameter of all capillaries in the area. Maximum dilatation of vessels

* The Americaine w/Neomycin Ointment® used in this study was supplied by Arnar-Stone Laboratories, Inc., Mount Prospect, Illinois.

took place within fifteen to twenty minutes after application of ointment and returned to normal in approximately four hours after removal of ointment.⁷

For topical application, neomycin has been reported to have the widest antibiotic spectrum. It is more potent against hemolytic staphylococci than bacitracin, chloramphenicol, chlortetracycline, or oxytetracycline, more effective against *proteus* than chlortetracycline or oxytetracycline, one of the most potent agents against *pseudomonas* and gram-negative bacilli, and moderately effective against hemolytic streptococci.⁸ Abrahamson has reported on the use of neomycin in ointment form to control the infection accompanying peripheral vascular disorders.⁹

The benzocaine-neomycin ointment under consideration, therefore, appeared to serve three purposes: (1) to relieve the local pain and tenderness; (2) to dilate the capillaries, and thus improve local blood supply, with diminution of stasis; and (3) to combat surface infections.

The ointment was applied after preliminary elimination of secondary infection in the ulcers, usually with a saturated solution of boric acid or another mild antiseptic. Patients were instructed to apply the ointment daily over the ulcer and surrounding area, and to apply a light bandage to protect clothing. No other treatment was used. There was no "laying up" and patients remained ambulant throughout period of treatment.

Results—During the three-month period of treatment, these patients seemed very composed, comfortable, cheerful and hopeful. They seemed completely relaxed, and healing was the natural consequence of this complete physical

and mental euphoria, following elimination of local infection and excruciating pain. The advantages of this twenty percent benzocaine ointment with neomycin may be summarized as follows:

1. Local ulcer pain was gradually and effectively eliminated.
2. There was accelerated stimulation of granulation tissue.
3. Effective elimination of secondary ulcer infection was noted.
4. Marked dilation of local capillaries occurred.
5. The ointment rarely caused local or systemic allergic reaction.
6. It eliminated local discharge gradually and effectively.
7. Odors disappeared.
8. Local gangrene was arrested and its extension prevented where it already existed.
9. The size of scar after healing was reduced.

Table I summarizes the results of treatment with the benzocaine-neomycin ointment in thirty-five patients. Relief of pain, of course, was the strictly subjective evaluation of the patient. However, some remarks of patients during this period of treatment were: "I sleep at night now"; "I walk much better"; "My ulcer does not discharge now"; "My leg no longer throbs."

Healing or a closing of the ulcer resulted in twenty-nine patients and at the time of preparing this paper the ulcers in the remaining six patients were healing or closing satisfactorily.

Discussion—This study presents a purely medical management of chronic leg ulcers, omitting surgical aspects, such as cauterization, skin grafts, ligation, etc. These continue to have a place in treatment of chronic ulcers, as before. It should also be noted that in

TABLE I

RESULTS OF TREATMENT OF CHRONIC LEG ULCERS WITH BENZOCAINE-NEOMYCIN OINTMENT

NAME	TYPE OF ULCER	RELIEF OF PAIN	DURATION OF TREATMENT	RESULTS
L.R.	Arteriosclerotic	Gradual and progressive	3 Months	Healed
L.B.	Traumatic	Marked	7 Weeks	Healed
E.O.	Anemic	Gradual	4 Weeks	Closed
B.B.	Hypertensive	Progressive	10 Weeks	Healed
I.R.	Arteriosclerotic	Marked	6 Weeks	Healed
J.T.	Avitaminosis (Dietetic)	Gradual	7 Weeks	Closed
M.R.	Varicose	Complete	6 Weeks	Healed
L.B.G.	Arteriosclerotic	Gradual	4 Weeks	Healed
J.T.	Mycotic	Very Gradual	4 Weeks	Healed
L.M.W.	Impetiginous	Immediate	3 Weeks	Closed
S.C.	Varicose	Complete	4 Weeks	Healed
A.N.	Arteriosclerotic	Progressive	5 Months	Closed
M.C.	Arteriosclerotic	Marked	3 Months	Healed
M.S.	Arteriosclerotic	Gradual	2 Months	Healed
J.K.	Arteriosclerotic	Progressive	6 Weeks	Healed
D.J.	Impetiginous	Marked	2 Weeks	Closed
L.C.	Arteriosclerotic	Progressive	4 Months	Healed
W.D.	Stasis (Myocardial)	Gradual	8 Months	Almost healed
A.R.	Metabolic	Progressive	4 Months	Healed
C.D.	Gangrenous	Complete	8 Months	Healing
F.R.P.	Nutritional	Gradual	2 Months	Healed
F.S.	Anemic	Marked	10 Weeks	Healed
L.E.	Nutritional	Gradual	2 Months	Closed
I.P.	Nephritic	Very gradual	6 Months	Healing
V.B.	Tuberculous	Complete	3 Months	Closing
B.S.	Diabetic	Marked	2 Months	Healing
C.M.	Varicose	Gradual	6 Weeks	Healed
E.G.	Varicose	Progressive	2 Months	Healed
K.M.	Arteriosclerotic	Marked	4 Months	Closed
O.F.	Avitaminosis	Complete	2 Months	Healed
W.A.	Varicose	Immediate	4 Weeks	Healed
Y.P.	Arteriosclerotic	Gradual	2 Months	Closed
A.M.	Varicose	Complete	3 Weeks	Healed
O.P.	Arteriosclerotic	Gradual	6 Weeks	Closing
A.F.	Anemic	Progressive	8 Weeks	Healed

order to treat leg ulcers successfully, a complete physical examination is necessary to determine the status of the patient. This includes a serological test for syphilis, blood chemical determination when indicated, urine examinations and any other laboratory procedure which is indicated either by a careful, complete physical examination, including a rectal and pelvic examination in the female, or is suggested by a detailed history taken from the patient at the first office visit. X-Rays are often needed to check for bone deformities in the lower limbs, abnormal growths, or sclerosis of the blood vessels. Temperature changes

in the lower extremities must be checked.

After classification of the leg ulcer has been accomplished, it is necessary to attempt to eliminate any constitutional or organic conditions that complicate the clinical condition of the patient. Tuberculosis, diabetes, anemia, nephritis, peripheral vascular disease, fractures, and fungus diseases, are just a few of the entities that may complicate the picture.

It may not always be possible to eliminate the organic or constitutional condition. It is, however, necessary to have the condition sufficiently "under control" to permit healing of the ulcer.

Conclusions

Alleviation of both psychic and physical aspects of chronic leg ulcers was achieved in thirty-five patients by use of an ointment containing twenty percent dissolved benzocaine and five mgs. neomycin sulfate per gram. Pain and throbbing were relieved promptly, patients were kept ambulant without "laying up", secondary infection was controlled, discharge eliminated, and odors de-

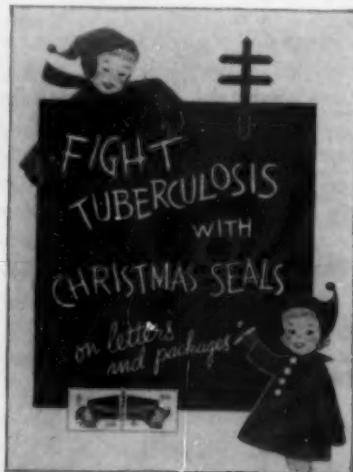
stroyed. Vasodilation of the capillaries increased peripheral circulation, with the result that a healing or closing of the ulcer resulted in eighty-two percent of the cases and the remaining eighteen percent of the cases were healing satisfactorily.

The scars were soft and minimal in size. No recurrence of any ulcer has been noted since preliminary healing.

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Diagnostic Aspects of **Pulmonary Embolism**

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Pulmonary embolism is the most common serious acute pulmonary lesion encountered in a general hospital.^{1, 2} This is not generally appreciated. Israel and Goldstein¹ found that pulmonary embolism was twice as common as either pneumonia or bronchogenic carcinoma. Short² cited a similar relationship between pulmonary embolism and carcinoma of the lung, however the incidence of pneumonia more closely paralleled that of pulmonary embolism. In the past most of the interest in and consequently the diagnosis of pulmonary embolism has been in the post-operative, surgical patient. Several studies have shown that the incidence of this disease is far greater in medical patients, pulmonary embolism frequently being mistaken for some other pulmonary or cardiac event.^{1, 2, 3, 4, 5}

Israel and Goldstein in a survey of the literature on this subject concluded that the mean embolism rate among medical patients was 1.1 percent of all hospital admissions, while the post-operative surgical rate was 0.38 percent.

Furthermore, Short on reviewing 120 cases of pulmonary embolism found 70 patients to be medical, 30 surgical and the remaining 20 obstetrical. Necropsy studies reveal that pulmonary emboli occur in approximately 10 percent of hospital deaths.^{6, 7} In 1937, it was estimated that 33,748 people die from this cause annually in this country.⁷ Pulmonary embolism is fatal in 40 to 65 percent of cases,^{1, 6} the mortality rate being lowest in patients who are post-operative.²

It is well known that emboli usually arise from plantar, calf, thigh and pelvic veins following the onset of phlebothrombosis or thrombophlebitis.^{4, 5, 8} It must be borne in mind that another important though less common source is the right heart, in particular, the right ventricle.^{5, 2} In Short's series, 5 of 36 patients with heart disease who succumbed to pulmonary embolism, had evidence of mural thrombi in the right heart at necropsy. Less commonly, pulmonary infarction may be secondary to local pulmonary venous thrombosis.^{9, 10}

The factors predisposing to pulmonary embolism are in general those leading to coagulation in the venous system. Byrne⁴ in a study of 748 cases of phlebitis reported the predisposing conditions in order of frequency as cardiac disease, post operative states, trauma, infection, varicose veins, childbirth hemiplegia, cancer, and a miscellaneous group of conditions. He pointed out that it is misleading to consider thrombophlebitis and phlebothrombosis as separate entities since fatal pulmonary embolism is common after each.

Many poorly understood factors lead to local venous thrombosis, the most important of which appears to be venous stasis. Local damage to vascular endothelium and changes in the coagulability of blood may be important. The increased incidence in the aged,^{5, 11} the female⁶ and the obese¹² has not been explained satisfactorily. Elderly people tend to be inactive but more important is their predisposition to diseases commonly associated with thromboembolic phenomena. It has been shown by anatomical and radiological studies that aneurysmal enlargements and saccular dilatations are frequently present in the deep venous system of the calf in the aged.⁸ Prolonged bed rest may be a contributing factor in the development of phlebitis however this view has been challenged.¹³ A high incidence of thromboembolic disease is reported in patients suffering from heart disease,^{1, 2, 4, 5} Hypoxia per se may be important.¹⁴ Shock when it occurs, and perhaps diuretics may be precipitating factors.⁶ The frequency of this complication in the cardiac patient is realized

when one considers that half the medical cases found to have pulmonary emboli at necropsy also had associated heart disease.⁶ The incidence is higher in rheumatic heart disease.²

The relationship between venous thrombosis and local endothelial damage as in direct trauma, freezing, or as a result of adjacent infection is more clearly understood. The possibility of toxic vascular damage in remote infections remains. Changes in blood coagulability have been described in carcinoma, the post operative period and following trauma or infection.^{15, 16, 17}

Pathology and Pathophysiology of Pulmonary Embolism and Infarction A most detailed study of the local lung pathology and pulmonary infarction was reported by Hampton and Castleman in their classic paper.⁶ Pulmonary infarcts were divided into complete and incomplete groups. The complete infarct is characterized by a sequence of events. Initially the alveoli are filled with blood while the alveolar sacs remain inflated with air for up to twenty-four hours. Alveolar wall necrosis with degeneration of the hemorrhagic exudate takes place and finally organization with replacement by fibrosis occurs, the whole process taking about three weeks or more.

In the incomplete group of infarcts, initial exudation is not followed by alveolar wall necrosis but rather by resolution which begins almost immediately and is completed in several ways without scar formation. The location of infarcts along with their size and shape will be discussed with the radiological findings in pulmonary infarction.

There are several reflex vasomotor sequela of pulmonary embolism, involving the pulmonary, systemic and coron-

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ary circulations. Large or small emboli cause intense reflex pulmonary vasoconstriction. There is however some diversity of opinion as to the pathway through which this is mediated. Sudden stretching of the pulmonary artery or its branches probably provides the stimulus. Evidence that the vagus is involved includes lack of response following vagotomy, or the administration of atropine or papaverine.^{18, 19, 20} More recently, Price²¹ studied the effect of miliary embolism, with barium sulfate, on pulmonary vasomotion in dogs, using Starling's heart lung preparation with an intact cephalic circulation. Abrupt pulmonary hypertension with distended right cardiac chambers and a resultant decrease in cardiac output occurred in 28 to 30 dogs. Death followed in several minutes. This response was prevented by severing the head. He felt that vasomotion was mediated through the sympathetic innervation of the pulmonary arterial tree. Stellate ganglion block, thoracic sympathetic ganglion section, or the administration of hexamethonium prevented this reaction.

Clinical evidence that vagal stimulation occurs in pulmonary embolism is seen in the appearance of sinoauricular and auriculoventricular disturbances, for example, sinus arrest and block, nodal rhythm and A. V. dissociation.²⁰ Reflex pulmonary arterial vasoconstriction probably accounts for the clinical picture of tachypnea, dyspnea and cyanosis which occurs when even a small branch is suddenly occluded. Systemic vasomotor collapse with resultant shock frequently accompanies pulmonary embolism. Several mechanisms may produce this response. Firstly, sudden decrease in cardiac output as a direct sequel of pulmonary arteriolar vasocon-

striction, secondly, neurogenic shock which is mediated centrally, and finally reflex systemic hypotension as a direct result of pulmonary hypertension. In regard to the latter, in animal experiments utilizing separate pulmonary and systemic circuits, an increase in pulmonary arterial pressure has been shown to produce a reflex systemic hypotension, this being abolished by section of the cervico vagosympathetic nerves.²²

Reflex coronary arterial contraction has been reported as occurring secondary to pulmonary embolism, this being mediated via the vagus nerve.²⁰ Convincing evidence, however, has been cited that such a pulmono-coronary reflex does not exist.²³ That myocardial ischemia and even infarction without coronary occlusion may follow pulmonary embolism is well documented.^{23, 24, 25} This has been attributed to such factors as decreased left ventricular return, a dilated right heart with local compression of the coronary circulation, shock, narrowed coronaries and myocardial disease rather than to coronary vasoconstriction.²³

Clinical Manifestations Classically, pulmonary embolism is suspected when there is sudden chest pain, dyspnea, cyanosis and shock, and subsequently, cough with hemoptysis in a patient who has venous thrombosis. It is important to point out that this is the exception rather than the rule. In only twenty percent of Israel and Goldstein's series of 90 patients was the picture classical.¹ They broke the various symptoms and signs of pulmonary embolism down into syndromes.

1. Pulmonary Syndromes	43.3%
2. Cardiac Syndromes	36.7%
3. Abdominal Syndromes	6.7%
4. Neurologic Syndromes	4.4%
5. Others	8.9%

Patients with pulmonary syndromes were most common: manifestation of pneumonia, dry pleurisy and pleurisy with effusion being frequent; however some patients presented with clinical pictures suggestive of bronchogenic carcinoma, lung abscess, or tuberculosis. The clinical history often helped in the differentiation of pulmonary embolism from pneumonia as the latter was frequently preceded by an upper respiratory infection. Phlebitis was a valuable additional sign. This was demonstrated in 55 of the 90 patients. Recurrent hemoptysis and episodes involving more than one lung were suspicious.

Pleuritic pain occurs in from 50 to 90 percent of instances of pulmonary embolism,^{1, 2} being much more likely in the surgical or obstetrical patient.² Dyspnea is reported in 50 percent, while hemoptysis, usually minimal in amount, is found in only 30-40 percent of cases.^{1, 2} It is interesting to note that the latter is less likely to occur in pulmonary embolism associated with heart disease.²

Physical signs in the chest are variable. According to Short,² these consist of signs suggestive of consolidation and pleurisy. There is an increased respiratory rate with decreased expansion on the affected side. Air entry is often diminished and a few rales are common. Initially, little may be found. Sometimes a pleural friction rub is audible. After one to two days moderate dullness on percussion may develop. Bronchial breathing, occasionally without rales, may appear. Frequently the diaphragm on the affected side is elevated, producing signs suggestive of pleural effusion or increased tympany, depending upon which side is involved. Rales are reported in 63 percent of cases,

Tachypnea in 44.4 percent and a variable pleural friction rub of short duration in 24.4 percent. Cyanosis is present in 7.7 percent of cases and may be marked.¹ Signs of pleural effusion occur in 15-30 percent of subjects.² The pleural fluid is hemorrhagic in half the instances with approximately equal numbers of red and white blood cells in the remainder.^{1, 2} Empyema rarely results. Local chest tenderness has been reported.^{1, 26}

It should be remembered that pulmonary embolism, although more likely to occur in the lower lobes, may occur in any lobe. Apical lesions may suggest tuberculosis, while oddly shaped lesions may simulate bronchogenic carcinoma.^{1, 2, 5, 27}

Syndromes primarily cardiac in nature were listed as occurring in 36.7 percent of Israel and Goldstein's series,¹ a clinical picture suggestive of myocardial infarction being most common. They also list coronary insufficiency, post infarction syndrome, congestive failure, and *cor pulmonale* syndromes presenting in pulmonary embolism.

It is important to again point out that half the medical patients, with confirmation of pulmonary infarction at autopsy are cardiacs, many of whom were in congestive failure. It is difficult to separate the superimposed symptoms of pulmonary embolism with certainty. Many instances are undoubtedly missed. Recurrent bouts of dyspnea, low grade fever, and hemoptysis in the cardiac patient should suggest this diagnosis. Furthermore, pulmonary infarction and myocardial infarction may occur in the same patient, either being primary.^{28, 24, 25}

Anginal pain is reported to be present in 8 percent of patients with pulmonary embolism and tachycardia in

59 percent.¹ Rates as high as 140 per minute are frequent.² Arrhythmias are not uncommon. Short feels that rapid heart rates or auricular fibrillation uncontrolled by digitalis is suggestive of pulmonary infarction. Tachycardia and tachypnea out of proportion to the patient's fever and pulmonary congestion should be viewed with suspicion.¹ Tench,²⁰ described a triad of tachycardia, digitalis toxicity, and mercurial fast edema in congestive heart failure complicated by pulmonary embolism. He noted that the association of congestive heart failure with bouts of palpitation, various arrhythmias, syncopal attacks, recurrent dyspnea, anxiety and anginal syndromes was suggestive of superimposed pulmonary embolism.

Symptoms suggestive of abdominal disease occur less frequently. Referred pain from the diaphragm as a result of pulmonary embolism may simulate an acute abdomen. Israel and Goldstein reported abdominal pain in 12 percent of cases of pulmonary embolism while in 6.7 percent this was the primary complaint. Neurological syndromes as a consequence of pulmonary embolism, although rare, do occur. Syncopal attacks, convulsions or even hemiplegia may result.¹

Fever up to 103° F. or greater may occur. This does not respond to antibiotics. About 80 percent of cases show some elevation of temperature.^{1, 2} Jaundice is always mentioned. This appears to be related to associated disease. Short points out that there is most commonly associated heart disease with congestive failure.

Aids in the Diagnosis of Pulmonary Infarction Three important aids are available i.e.: The chest x-ray, the electrocardiograph and the determina-

tion of serum levels of glutamic oxaloacetic transaminase (SGO-T).

RADIOGRAPHIC EVIDENCE The classification of pulmonary infarcts into complete types⁵ has an important bearing on the x-ray diagnosis of this lesion. In review, the complete infarct is one in which there is alveolar wall necrosis, slow resolution, and healing with scar formation over the period of several weeks. In the incomplete group, absorption occurs promptly in one or two days without residual fibrosis.

Smith²⁷, lists the primary and secondary x-ray manifestations of complete infarcts as:

A. Primary: An abnormal density of any shape, triangular, round, pyramidal, oval or irregular. There may be bizarre forms due to superimposed infarcts which can only be distinguished by multiple x-ray views.

The infarct is always in contact with one or more pleural surfaces⁵. The density-size varies from 0.3 to 10 cm. diameter with average dimensions 3 x 2 to 3.5 x 5 cm².^{5, 27}

The location of pulmonary infarcts is quite variable. Several series indicate a predominance in the right lower lobe but any segment may be affected.^{5, 27, 28} Infarcts heal from the periphery inwards leaving a linear band of fibrosis visible on chest x-ray. Signs of complications such as pneumonia, empyema, or abscess formation may develop.

B. Secondary: These signs include clouding in the region of the costophrenic angle on the involved side, hilar vessel accentuation, a prominent pulmonary conus, elevation of the diaphragm and pleural effusion.²⁷

In the incomplete group of infarcts, x-ray findings usually consist of trans-

sient linear shadows which may be missed on x-ray if this is not taken within 24 to 48 hours after infarction.^{1, 2, 5, 27}

The frequency with which a diagnosis of pulmonary infarction is made by the radiologist depends upon his awareness of this lesion, diagnoses such as pleurisy, consolidation, atelectasis being much less frequent when this is considered. Carlotti et al.²⁰ found that 33 percent of 108 instances of pulmonary embolism, proven by autopsy were suspected of having pulmonary embolism, radiologically, in the period 1936-1940. This increased to 60 percent of 122 instances in the period 1941-1945 when pulmonary embolism was more frequently considered. Other series report x-ray evidence of infarction in from 20 to 90 percent.^{2, 21, 22} The failure to recognize pulmonary infarction often lies in the use of portable x-rays.²⁷

In Israel and Goldstein's series, 55.2 percent of cases with chest x-rays were suspected of having pulmonary embolism as one of the possibilities. On review of these films with the radiological department, another 28.4 percent had significant findings which suggested this diagnosis. It is important to note that chest x-rays may be entirely normal following embolism, particularly so after large or very small emboli.¹

THE ELECTROCARDIOGRAPH IN PULMONARY EMBOLISM In 1935, McGinn and White²² reported the electrocardiographic changes associated with acute cor pulmonale secondary to pulmonary embolism. These were, a deep S₁ and Q₃, depression of the RS-T segment in lead I, elevation of this segment in lead III and inversion of T₃ or T₂ T₃. Later rotational effects in the precordial leads were described. There is a tendency

to consider these changes mandatory in the diagnosis of pulmonary embolism. These findings are however the exception, rather than the rule. In most of a series of 41 fatal instances of pulmonary embolism, electrocardiographic changes consisted chiefly of depression of the RS-T segment and inversion of the T wave in one or more leads without the appearance of a deep S₁ or Q₃.²³ Thus even in fatal instances, electrocardiographic changes are frequently non-specific and difficult or impossible to distinguish from coronary insufficiency.

As outlined previously, myocardial infarction may occur, while minor microscopic changes termed myomalacia, are frequent following pulmonary embolism.^{23, 24, 25} The latter probably accounting for the RS-T segment and T wave changes so frequently associated with this condition. The acute coronary insufficiency pattern is more likely to occur in elderly patients with coronary arterial disease while the cor pulmonale pattern is more frequent in the younger patient without heart disease. The presence of left axis deviation prior to pulmonary embolism does not favor the development of the cor pulmonale pattern.²²

Israel and Goldstein report significant electrocardiographic changes in 70.7 percent of 75 patients with pulmonary embolism. This they point out did not mean pathognomonic changes. These were rarely seen. Tables from their report illustrate the changes found.

ABNORMALITY	PERCENT
ACUTE COR PULMONALE	6.7
CORONARY INSUFFICIENCY PATTERN.....	24.0
MINOR POSITIONAL CHANGES	16.0
T WAVE INVERSIONS IN RIGHT	
PRECORDIAL LEADS	13.3
OTHER ABNORMALITIES	10.7
NO ABNORMALITIES	29.3

They then divide the changes into positional and non positional.

A. POSITIONAL CHANGES

ABNORMALITY	PERCENT
1. ACUTE COR PULMONALE	6.7
2. CHRONIC COR PULMONALE	2.7
3. MINOR POSITIONAL CHANGES	
RIGHT AXIS SHIFT	16.0
CLOCK WISE ROTATION	29.3
APPEARANCE OF R IN AVR	24.0
VERTICAL SHIFT	10.7
APPEARANCE OF S ₁	10.7
APPEARANCE OF Q IN III AND/OR AVF.	6.7

B. NONPOSITIONAL ABNORMALITIES

1. CORONARY INSUFFICIENCY	24.0
2. ST-SEGMENT ELEVATIONS	
IN III AND AVF	4.0
IN PRECORDIAL LEADS	8.0
3. T-WAVE INVERSIONS IN RIGHT PRECORDIAL LEADS	24.0
4. DISTURBANCES IN RHYTHM AND CONDUCTION	
TRANSIENT ATRIAL FIBRILLATION	10.7
TRANSIENT ATRIAL TACHYCARDIA	1.3
SINUS TACHYCARDIA (IN ASSOCIATION WITH OTHER FINDINGS)	33.3
TRANSIENT PREMATURE CONTRACTIONS	13.3
RIGHT BUNDLE BRANCH BLOCK	9.3

SERUM GLUTAMIC OXALACETIC TRANSAMINASE (SGO-T) Determination of SGO-T is a more recent aid for the differentiation of pulmonary embolism from myocardial infarction.

La Due et al²³ have shown that SGO-T is a specific enzyme concerned with the transfer of the alpha-amino nitrogen of aspartic acid to alpha-ketoglutaric acid. This enzyme is present in all tissues but present in highest concentrations in heart, skeletal muscle, brain, liver and kidneys in descending order. The concentration in lung tissue is very low. Damage to these tissues results in the release of this enzyme. A serum level greater than 40 units per cubic centimeter being considered abnormal.

There are both clinical and experimental reports indicating no rise in SGO-T following pulmonary infarction.

tion.^{24, 25} However, a delayed rise in serum transaminase may occur in this disease,²⁶ this usually being evident about the fourth day after the onset of symptoms. Levels rarely exceed 65 units/ml. This has only been found in those cases of embolism followed by pulmonary infarction.

In 49 patients suffering from pulmonary embolism in whom SGO-T determinations were done, Israel and Goldstein¹ found levels elevated in 17. They attributed the rise in SGO-T in these patients to hepatic or biliary disease, secondary myocardial infarction, or musculo skeletal injuries. In only one instance were they unable to account for this rise.

Summary

Pulmonary embolism is a more common disease than is generally appreciated, its diagnosis being dependent upon the index of suspicion of its occurrence. It may be present with signs and symptoms suggestive of many varied clinical syndromes. Classical features are the exception rather than the rule. Chest x-rays are often misinterpreted and seldom if ever diagnostic. The electrocardiogram may be of assistance, however non specific changes are the rule. Serum glutamic oxalacetic transaminase determinations are only of value in the diagnosis of pulmonary infarction when no rise is observed. An elevated level does not exclude this diagnosis.

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Clinico-Pathological Conference

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This 54-year-old, white widow was admitted to the Albany Hospital on May 8, 1953, because of fever and diarrhea. Ten days prior to admission, she had a shaking chill followed by fever and a non-productive cough. The following day, she developed diarrhea characterized by 4 to 8 loose, brown stools a day without tenesmus. The family physician prescribed aureomycin, 250 mg. every 4 hours, and paregoric orally. Fever and mild diarrhea persisted. Two days before admission, the patient became incontinent, lethargic and confused. She had complained of slight soreness of the mouth since the onset of her illness and was also troubled by bouts of profuse sweating. The patient lived alone and ate irregularly. There was a history of moderate alcohol intake and mild exertional dyspnea. The patient had an appendectomy in childhood and pneumonia in 1949. She had three pregnancies, but had no living children. Her mother died of cancer of the breast, and her father succumbed to "heart trouble".

Physical Examination On examination at the time of admission, temperature was 101°F., pulse rate was 98 and respiratory rate, 30 per minute. Blood pressure was 130/70. The patient was moderately obese and appeared lethargic, but not confused. Skin was warm and dry. There was no lymphadenopathy. Motion of the neck was resisted, but actual stiffness was not present. All cranial nerves were intact, and the fundi were clear. Examination of the ears, mouth, nose and throat was normal. The chest was symmetrical; respiration was rapid and shallow. The breasts were normal. The lung fields were clear with the exception of coarse rales at both bases posteriorly. The liver edge, palpable 6 cm. below the right costal margin, was firm, smooth and non-tender. The spleen was not palpable. All extremities were normal. There was no gross sensory impairment, and all tendon reflexes were equal and active. The neurological examination was normal.

Laboratory Data—Serological tests for syphilis were negative. Hemoglobin

was 14 gm. erythrocytes were 4.41 million per cu. mm. and hematocrit 43 ml. per 100 ml. Leukocytes were 3,750 per cu. mm. with 7% band forms, 70% neutrophils and 23% lymphocytes. Urine contained 1+ albumin, was negative for sugar and acetone and revealed 2 to 5 white cells per high power field. The specific gravity was 1.020. The fasting blood sugar was 92 mg. and non-protein nitrogen, 27 mg. per 100 ml. Stool (guaiac) was negative for occult blood. Photoroentgenogram of the chest was negative. An electrocardiogram was within normal limits. Lumbar puncture revealed normal spinal fluid pressure and dynamics. The fluid contained 34 erythrocytes and 4 mononuclear cells per cu. mm. Total protein content was 14 mg. and sugar, 56 mg. per 100 ml. Chlorides were 123 mEq. per L.

Throughout her hospital stay, the patient had an unremitting fever which ranged between 100 and 104°F. During the first two days of her hospital stay, the patient became somewhat more lethargic and confused and her fever persisted. Six blood cultures drawn during this period, as well as four taken later, were sterile. Four urine cultures were also sterile. Six stool cultures showed the presence of *Escherichia coli* and *Streptococcus fecalis*. Blood agglutinations for typhoid, paratyphoid, brucellosis, and tularemia were negative. Heterophile agglutination and cold agglutinations were also negative. Because of the patient's poor condition, chloramycetin 250 mg every 4 hours was started at the end of the second hospital day. The next morning, three flat, rose-colored spots 2 to 3 mm. in diameter appeared on the upper abdomen. These lasted four days. During the next three days, the patient's condition continued

to deteriorate. She had 3 to 4 guaiac-negative, liquid, green stools per day and remained somewhat disoriented. Because of the patient's inability to swallow, a Levine tube was passed. Daily Sustagen feedings were supplemented by intravenous glucose, vitamin B complex, ascorbic acid and appropriate electrolytes.

On the fourth hospital day, the total white count was 3,750 with 56% neutrophils, 40% lymphocytes and 4% monocytes.

Bone marrow aspirate was hypoplastic, exhibiting a megaloblastic defect in the erythrocytic series.

Repeat marrow examination on the tenth hospital day was consistent with aplastic anemia. Aleukemic leukemia could not be ruled out. Several portable x-rays of the chest showed haziness of uncertain significance at both bases.

By the sixth hospital day, the patient's condition had worsened. Aureomycin, 500 mg intravenously, was given every 6 hours in addition to chloramycetin. Two days later, the patient's course continued down-hill. Chloramycetin was stopped and cortisone was begun in dosage of 25 mg every 6 hours. By this time, the patient was dyspneic and had developed a decubitus ulcer. She was placed in an oxygen tent. There was no response to cortisone therapy. Two white counts in the next two days were 2,550 and 2,800 per cu. mm. with a moderate shift to the left in the granulocytic series. Hemoglobin had fallen to 9.5 gm. and hematocrit to 32 ml. per 100 ml. Fever continued unabated. The patient lapsed into coma and died on the fourteenth hospital day.

Discussion

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MEDICAL TIMES

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Dr. Beebe: The patient presented today was a 54-year-old female whose illness began on the 8th of May, 24 days before her death. It is important to know the season of the year because of the infections to which she might have been exposed, which could have precipitated such a febrile illness. The onset, ten days before admission, was acute, with chills, fever persisting until death, an unproductive cough and diarrhea with 4 to 8 stools daily.

About two days before admission, confusion, lethargy, incontinence, sweats and soreness of the mouth occurred. Most of these symptoms continued until death.

Her past history was significant in that she had lived alone and had been on a relatively poor diet. She was moderately addicted to alcohol. Of her three pregnancies, there are no living children; ages and the causes of their deaths are unknown.

Lethargic—On admission, the patient's temperature was 101°F., her pulse was 98 and respirations were 30. She was obese, and there was no evidence of weight loss as one would expect had she been chronically ill. She was quite lethargic and it was difficult, though important, to ascertain whether her mental state was due to infection of the central nervous system, dehydration or to high fever. Her neck was stiff, thought to be of a voluntary nature as is often confusing, in which case a spinal puncture should be performed.

Her respirations were shallow and rapid. At the lung bases there were many coarse rales. The liver was enlarged 6 cm. below the costal margin

and the spleen was not palpable.

Possibly the large liver resulted from dietary deficiency—a fatty stage of cirrhosis. In the presence of high fever her white count was only 3,750 and the differential count showed 7 bands, 70 polymorphonuclears and 23 leukocytes, nothing very unusual. The urine was positive for albumin and a few white blood cells. In spite of the diarrhea the stools were free of occult blood. Spinal fluid protein was 15 mg.% which was in the lower limit of normal. There were 34 red cells in the spinal fluid possibly due to trauma. The spinal fluid sugar was 56 mg.% which was within normal limits. The spinal fluid chloride was 123 ml/l and the Wassermann was negative. In the hospital her temperature ranged from 100 to 104 degrees, the lethargy and the confusion became worse. Ten blood cultures were sterile. Four urine cultures were sterile. There was no note as to whether special cultures for *Brucella abortus* were made. From the stools *Streptococcus fecalis* and *Escherichia coli* were cultured, neither of which is particularly pathogenic. No sputum could be obtained and studies of gastric washings are not reported.

Apparently one of the most dreaded of the bacteria causing diarrhea, *Staphylococcus aureus*, was not found in the cultures. Agglutinations for typhoid fever, para-typhoid fever, tularemia were all negative as was the heterophile antibody agglutination and the cold agglutinin titer. No note was made of Rocky Mountain spotted fever agglutination which should be included in a study of all febrile illnesses.

She received chloromycetin, 250 milligrams every four hours, a dosage sometimes inadequate to treat rickettsial in-

fections or typhoid fever, but adequate for the majority of conditions in which chloromycetin might be effective.

Aplastic Anemia — On the fourteenth day several "rose spots" appeared on her abdomen. This observation would arouse some suspicion of typhoid fever; however, rose spots in typhoid fever appear as a rule in the first week or ten days.

The bone marrow was hypoplastic and suggestive of aplastic anemia or aleukemic leukemia. X-rays of the chest showed haziness at the lung bases. The film, taken on May 8, was about the time the patient entered the hospital. The interpreter felt that the findings were due to the very heavy soft tissue shadows which existed in this obese female. As for subsequent films, I do not think there is any point in showing them all; they are mostly portable films, and not satisfactory for detail.

As her condition became worse achromycin was started, and chloromycetin continued, without apparent benefit. She remained disoriented, nasogastric tube feedings were instituted, in addition to intravenous glucose and vitamins. Two days before death her white count was reduced to 2,500 per cu. mm. The hemoglobin fell from normal to 9.5 gm. hematocrit from normal to 32% and she died 14 days after admission.

Fever — This patient presented a variety of findings. The continuous fever gives us about the best clue. "Shaking" chills are not too significant as they do occur when there is invasion in the blood stream by bacteria, sometimes without septicemia. Chills, too, accompany many acute and chronic conditions not associated with infection, as for example, hemorrhage. To help in arriving

at a diagnosis, let us follow a broad classification of diseases which produce fever.

- Fever associated with leukocytosis.
- Fever associated with leukopenia.
- Fever associated with skin lesions, i.e., viral and rickettsial diseases, bacterial endocarditis, collagen disturbance, tuberculosis, lymphomata and blood dyscrasias.

- Fever associated with pharyngeal lesions which would include the common pyogenic organisms as well as syphilis, mononucleosis, tuberculosis, leukemia and agranulocytosis.

- Fever associated with arthritis. In this group we would include gonorrhea, brucella mellitensis, Reiter's syndrome, tuberculosis, rheumatic fever, sickle cell anemia and again the collagen disorders.

- Fever in the presence of lymph node enlargement, such as tuberculosis, mononucleosis, tularemia, cat scratch disease, the lymphoma group and leukemia.

- Fever accompanied by diarrhea. This group would include the salmonella and dysentery organisms, parasites, as well as tuberculosis and numerous other conditions.

Collagen — Thus, we are confronted by a problem involving fever, leukopenia, diarrhea, skin lesions, symptoms referable to the central nervous system and the lungs. We must think now of a few diseases which involve so many areas.

Polyarteritis has to be considered whenever multiple systems are involved, but the course here was too acute for most collagen diseases which are relatively chronic, sometimes with remissions. Death rarely occurs within 24 days, as happened here.

Rocky Mountain spotted fever at this

time of year would be quite uncommon and is usually associated with an extensive skin rash, not just a few macular spots.

Brucella abortus is always a possibility, but agglutination tests were negative, also the blood and urine cultures were sterile. Hodgkin's disease rarely runs such a rapid course.

Typhoid fever can be ruled out primarily because of the character of her illness. In typhoid fever it would be unlikely not to obtain a positive culture of blood, stool or urine, and here satisfactory studies were made. I think that the absence of positive cultures, the absence of positive agglutinins, the absence of bleeding with the diarrhea, the belated appearance of rose spots as well as the absence of any exposure would be a little against typhoid fever.

Subacute bacterial endocarditis should be considered, although here again there are no clinical signs to warrant making this diagnosis. Aleukemic leukemia must be mentioned because of the bone marrow studies and the falling white count, but there usually is a triad in aleukemic leukemia: 1) anemia, 2) leukopenia and 3) bleeding gums or other evidences of leukemia. The same may be said of most of the patients with aplastic anemia, so I doubt this was aleukemic leukemia. The hematological abnormalities presented by this patient can develop in the presence of a poorly balanced diet associated with overwhelming infection when there may develop a marked leukopenia. And the picture is often confused with aplastic anemia.

Tuberculosis — We have hurriedly covered many of the conditions which can cause fever and tried to divide them down into groups associated with laboratory and clinical findings. To quote

from Dowling,¹ "Any patient with high fever without definite localizing symptoms and signs, or definite indications of other disease should be suspected of having acute miliary tuberculosis."

Now think back to the classification of fevers that we have just mentioned, and you will find that tuberculosis can be present in all of the seven groups. So we have this one disease, miliary tuberculosis, that would account for the fever, chills, diarrhea, cough, mental confusion, sore mouth and sweats.

Possible Diagnosis — In the study of patients with unexplained fever the problem of miliary tuberculosis confronts us frequently on ward rounds. It is important to remember death may intervene before miliary nodules are large enough to be seen by x-ray, the sputum and gastric contents may show no tubercle bacilli and the tuberculin test will often be negative. When this diagnosis is a possibility it is sometimes advisable to institute antibiotic therapy while continuing studies for other diseases. Antituberculous drugs will not mask these conditions.

In concluding, I will make a diagnosis of miliary tuberculosis, despite the apparent absence of tuberculous nodules in the x-rays, as well as the inability to find tubercle bacilli in the sputum and gastric contents prior to the patient's death.

Forty-four students submitted diagnoses as follows:

Nine—Typhoid fever

Twenty-three—Miliary tuberculosis

Four—Hodgkin's disease

Two—Pernicious anemia

Two—Aleukemic leukemia

1. Dowling, Harry F., *The Acute Bacterial Diseases*, Philadelphia, W. B. Saunders, 1948.

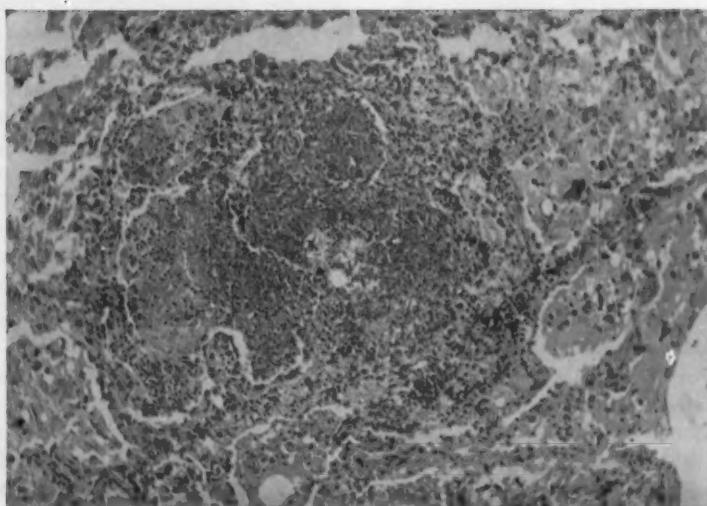


Figure 1. In tuberculous bronchopneumonia the alveoli are filled with caseous exudate.

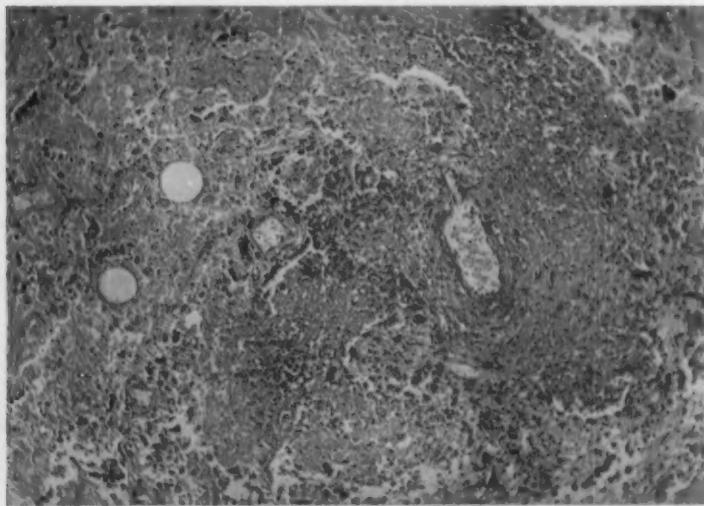


Figure 2. A pulmonary artery is involved by the tuberculous inflammatory process.

One—Rocky Mountain spotted fever
One—Typhus fever

Two—Infectious mononucleosis

Pathological Findings

Discussant: Arthur A. Stein, M.D.,
Associate Professor of Pathology, Albany Medical College, Albany, New York.

Dr. Stein: Necropsy on the body of this 54-year-old white, obese woman was performed seven hours after death. The major pathology was found in the lungs. The right lung weighed 890 gm.; the left lung 990 gm. The pleural surfaces were moist and smooth except for a few posterior fibrous adhesions on the left. On careful inspection there were multiple scattered subpleural yellowish firm nodules approximately 0.2 cm. in diameter.

The cut surfaces of both lower lobes and the right middle lobe were intensely congested, wet, grayish-red and again revealed diffuse "pepperling" of the parenchyma by these yellowish foci of consolidation 0.1 to 0.3 cm. in diameter.

On dissection the bronchi revealed marked mucosal congestion and they were filled with much frothy fluid. Careful microscopic study of these organs revealed diffuse tuberculous bronchitis and confluent bronchopneumonia. The alveoli were filled with protein rich fluid, neutrophiles and macrophages (Fig. 1) all of which were undergoing caseous necrosis.

In some situations a few Langhans type giant cells were present. In some zones, the blood vessels, both arteries and veins were involved by the inflammatory process. Almost half the circumference of one vessel was totally necrotic and infiltrated by neutrophiles, few plasma cells, macrophages and an occasional giant cell (Fig. 2).

In other situations caseous material was attached to the intimal surface of veins. The bronchial walls were also involved in this caseous granulomatous process. The small discrete yellowish foci of consolidation proved to be clusters of discrete or conglomerate anatomic tubercles. Special stains revealed large numbers of acid fast bacilli in all these inflamed sites. This widespread process through the lungs indicated both bronchogenic and hematogenous dissemination. Furthermore, the lungs were the obvious site of hematogenous dissemination to other viscera. The hilar lymph nodes were also involved in this specific inflammatory process.

Histologically, miliary dissemination to the liver, spleen, kidneys and adrenals was also verified. In the liver the granulomata were found primarily in the portal triads. The hepatic parenchyma was congested and showed diffuse fatty metamorphosis (Fig. 3).

In the adrenal glands multiple miliary and conglomerate caseous tubercles were observed in the cortex (Fig. 4).

In the kidneys the lesions were most common in the cortico-medullary region. Although the brain was congested and edematous there was no histologic evidence of tuberculous involvement.

Death of this patient was due to bilateral tuberculous broncho-pneumonia with widespread hematogenous miliary dissemination.

ANATOMIC DIAGNOSES:

Miliary tuberculosis, generalized;
Bronchopneumonia, tuberculous, bilateral, with miliary spread to adrenals, liver, spleen, kidneys; Congestion and edema, acute, of brain; Fatty metamorphosis, of liver.

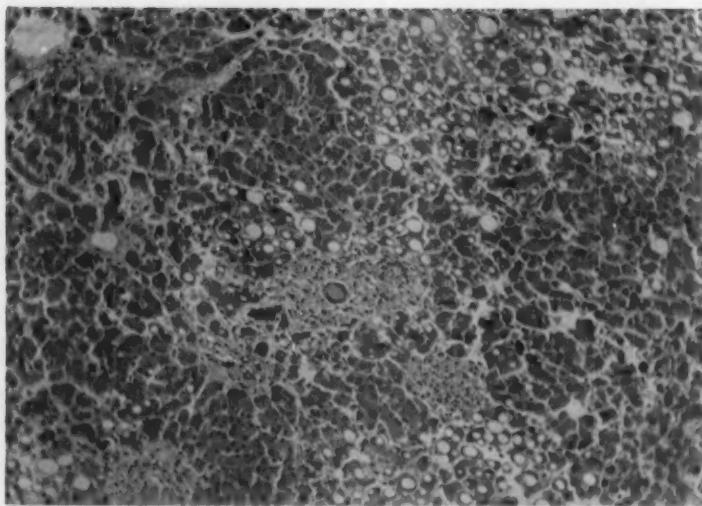


Figure 3. Anatomic tubercles are found in the liver showing moderate fatty metamorphosis.

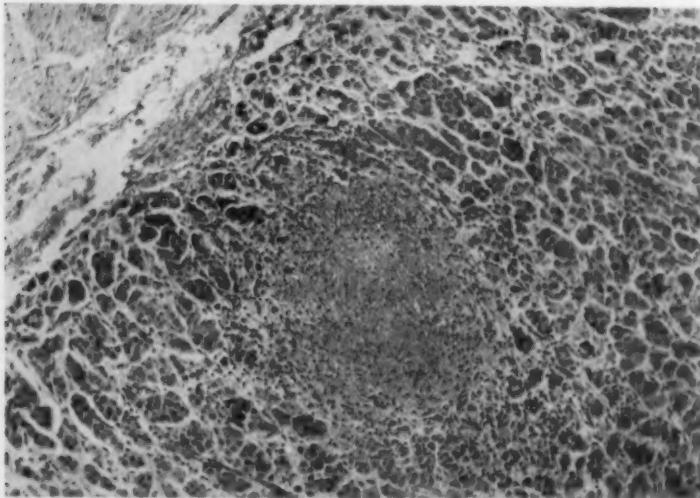


Figure 4. Caseous foci are present in the adrenal cortex.

Final Discussion *Discussant: Charles A. Hall, M.D., Assistant Professor of Medicine, Albany Medical College, and Director of Hematology, Albany Veterans Administration Hospital, Albany, New York.*

Dr. Hall: There are two ways here in which the bone marrow studies and the blood studies might have led one astray, and apparently from the students' reports they did lead a considerable number of people astray. Let us first consider the megaloblasts. Whoever made the diagnosis of pernicious anemia is quite right in the sense that megaloblasts are usually associated with pernicious anemia, and certain other anemias such as that of sprue and the related group of malabsorption syndromes. It is not true, however, that megaloblasts are restricted solely to these conditions.

Occasionally in a variety of other hematologic disorders we do see megaloblastosis which is usually of a minor degree as it was in this case. The bone marrow as a whole did not resemble that of pernicious anemia and, of course, clinically I do not think there is a great deal here to suggest pernicious anemia.

There was also the possibility of an aleukemic leukemia. It might seem that a diagnosis of leukemia is a very simple one to make from the bone marrow. Sometimes it is not, particularly early aleukemic acute leukemia. There was some immaturity of the granulocytic series in this marrow which led to a possible diagnosis of leukemia. Usually when a patient is in a terminal stage of leukemia one can easily make the diagnosis. Certainly, the clinical course of this patient was not suggestive of an early leukemia. I should also mention that obviously the chloromycetin had

nothing to do with this patient's leukopenia since the leukopenia antedated the giving of the chloromycetin.

Pulmonary Tuberculosis — The blood and bone marrow findings of tuberculosis are very interesting. As you know, a great deal has been written about the blood findings in pulmonary tuberculosis. The abnormalities are minor, non-specific and I will say nothing more about them. The findings in a generalized tuberculosis are much more pronounced, and are usually associated with tuberculosis involving the hemopoietic system. The blood changes may range all the way from a pancytopenia to a leukemoid reaction, in other words almost any abnormality can be found. A cytopenia is the most common finding, and it may involve all three cell series, the red cells, the granulocytes and the platelets or it may be confined only to a leukopenia.

This patient had primarily a leukopenia. Occasionally leukemoid reactions have been observed. Sometimes, especially terminally, immature cells of both the red cell and the granulocytic series have been seen in the peripheral blood. In one series of cases in the literature, all of the patients had macrocytosis. Again these changes are entirely non-specific, but interesting.

Bone Marrow — The bone marrow is involved in a large number of patients with miliary tuberculosis. In one autopsy series, 33 out of 37 patients had miliary tubercles in the marrow. On aspiration the marrow is often hypoplastic. This, I think, is the most common finding. It is not an aplastic marrow or a markedly reduced marrow, but in general a somewhat hypocellular marrow which was the case in this particular patient we are discussing. In one case

that I was able to find in the literature the diagnosis of leukemia was held up until the time that the patient died.

It is interesting to speculate why these patients get such profound disturbances in the blood and bone marrow with generalized tuberculosis. One possibility may be the effect of the tuberculosis on the marrow itself. I am not thinking as much of the crowding out of normal marrow, but of the competition for substances that are needed for normal cell growth. Of course, in generalized tuberculosis there is a widespread infection and it may be that the toxic effect from this infection causes blood changes. Then, too, we must consider what effect disease of the spleen may have. Almost all of the patients have tuberculosis of the spleen and perhaps some of the blood changes are secondary to splenomegaly.

At the present time in Veterans Hospital we have a patient with miliary tuberculosis whose hematologic findings are almost identical with this patient's. The leukopenia is slightly more severe, and this patient also had a few megaloblasts in his marrow.

The marrow may help one in making the diagnosis of miliary tuberculosis. Obviously none of these changes in either the blood or the marrow that I discussed are at all specific, and certainly would not lead one to the diagnosis of miliary tuberculosis, although everyone should

be aware that such changes can occur with miliary tuberculosis. The marrow being frequently involved, it is often a good source from which to make smears for acid fast bacilli and in many instances tuberculosis has been demonstrated by this means. One may also culture the bone marrow.

This has the disadvantage of being a rather slow means of diagnosis since one may have to wait weeks for the culture to grow and by the time the culture becomes positive the patient may be dead.

A third approach is to make a section of the marrow. One is unlikely to pick up a granulomatous lesion in the ordinary marrow aspirate because the tissue is distorted by smearing. If one takes a section of marrow—a marrow biopsy—there is a fairly good chance of showing the lesions.

Liver Biopsy—Liver biopsy is another good approach to the diagnosis of miliary tuberculosis. As you saw in this case, the liver was rather heavily involved. Even if the liver is not obviously involved and one does suspect miliary tuberculosis, it is worthwhile attempting a biopsy, because the incidence of involvement of liver is very high in this disease. If there is an enlarged liver, or if there are signs of liver malfunction, there is an excellent possibility of making the diagnosis before there is any bacteriologic confirmation.

Expert Medical Witness From A Different Community

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The topic of this month's article is whether in an action for malpractice, a physician from one community is competent to testify as an expert witness to the standards of care required of the defendant who practices in a different community.

The law requires physicians to possess and use that reasonable degree of skill, knowledge and care usually possessed and exercised by physicians under similar circumstances. One of the circumstances to be considered under this rule is the community, vicinity or locality in which the physician practices. The standard of care required of a physician to avoid liability in malpractice actions simply stated is to follow general medical custom in the same vicinity or same or similar communities.

The geographical limitation of this rule arose in earlier days when standards of practice varied considerably from one community to another. Because of slow methods of transportation and difficult means of communication the physician in a small or rural community who did not have the oppor-

tunity or ability to keep up to date with advances in his profession was not held to the same standard of care as physicians in large communities. So the conduct of a defendant physician was judged by the standard of skill and care normal to physicians practicing in the same vicinity.

Today with rapid methods of transportation and easy means of communication the reason for the earlier rule has largely disappeared. "The horizons have been widened, and the duty of a doctor is not fulfilled merely by utilizing the means at hand in the particular village where he is practicing."¹ Latest methods and treatments, are within the reach of most doctors. Facilities of nearby communities which rural condi-



tions once denied him are now usually at the disposal of country practitioners. Consequently the standards of care required of physicians in small communities has been raised to include methods employed in similar communities or localities.

In a malpractice suit a member of the medical profession as an expert witness establishes the standards of care by which defendant will be judged by relating to the jury the methods and customs of the community in which defendant practices.

The rule regarding the competency of expert witnesses to testify has of course followed closely the general rules defining standards of care. Formerly the expert witness was required to be familiar with the practice and standard of care in defendant's particular community. This rule has been relaxed to permit expert witnesses to qualify by proving familiarity with practice and standards of care in "the same locality or vicinity," "the same or similar or like communities," or in "similar localities in the same general neighborhood," as that in which defendant practices.

The question posed, whether an expert witness from one community is competent to testify to the standards of care of a defendant from a different community is seen to depend upon the answer to a more basic question; Are the standards of medical care for a particular community to be determined by practice in a narrow geographic location, or are procedures in other communities or areas to be taken into consideration?

Courts in general have taken cognizance of the greater ease with which the country practitioner can keep abreast of medical learning, and the

enlarged facilities at his disposal, and are applying more stringent standards of medical care to small communities. There are of course differences among jurisdictions in those standards and their application.

Origin of Rule As early as about 2250 B.C. legal regulations existed dealing with the practice of medicine. Section 218 of the Code of Hammurabi (Babylon) provided, for example, that "if a physician make a deep incision upon a man with a bronze lancet and cause the man's death, or operate on the eye socket of a man with his bronze lancet and destroy the man's eye, they shall cut off his hand."⁷³ The physician was in effect an insurer. The law today is of course not so stringent. A reasonable standard of medical care has been adopted. All the circumstances surrounding each case must be considered to determine whether defendant's behavior has been negligent. Conduct which would be reasonable under one set of conditions might be unreasonable under another.

Courts in this country pointed out quite early in our history that one of the conditions to be considered in determining the reasonableness of defendant's act was to judge it by the standard of skill and care employed by other physicians practicing in the same community as defendant. A country doctor was not to be judged by his city colleagues.

An Iowa court in 1872 indicated that the standard of ordinary care may vary within the same state according to the greater or lesser opportunities afforded by the locality for observation and study.⁷⁴ In 1897 the doctrine was more clearly set out when the court held specifically that the physician conduct

his practice at the same level of competence exercised by practitioners in the same or similar localities.⁴ The facts in that case were that plaintiff suffered an oblique fracture of the humerus of the left arm at a point about three inches above the elbow. Defendant physician was employed to reduce the fracture. He did so and continued to treat the injury at intervals for about two and one-half months when it was regarded as healed. The arm was crooked at the time of the trial and plaintiff alleged negligent treatment as its cause. The jury found for the plaintiff but in the amount of only \$1.

The trial court charged the jury that defendant in order to clear himself of a charge of malpractice must have possessed and exercised the "average proficiency, skill, and care ordinarily possessed and exercised in the medical profession generally, *in the vicinity of where the defendant practiced.*"⁵ Plaintiff claimed this charge was erroneous in that the trial judge should have included other similar localities in addition to the particular one where defendant practiced.

The appellate court agreed that the charge was erroneous but pointed out plaintiff was not prejudiced thereby inasmuch as the evidence showed that there were several educated and experienced physicians and surgeons who practiced in defendant's resident town and vicinity. These doctors were not shown to have been incompetent and the presumption was that they had the average ability ordinarily possessed by men of their profession in similar localities.

The Court was loathe to confine the standard of care to a particular community inasmuch as that community

might have only quacks practicing there. It quoted with approval the language of an earlier Indiana case:

"It seems to us that physicians or surgeons practicing in small towns or rural or sparsely populated districts are bound to possess and exercise at least the average degree of skill possessed by and exercised by the profession in such localities generally. It will not do, as we think, to say that if a surgeon or physician has exercised such a degree of skill as is ordinarily exercised in the particular locality in which he practices, it will be sufficient. There might be but few practicing in the given locality, all of whom might be quacks, ignorant pretenders to knowledge not possessed by them; and it would not do to say that, because one possessed and exercised as much skill as the others, he could not be chargeable with the want of reasonable skill."⁶



Other courts did not share this concern over the existence of unskilled medical aid in a particular area and limited the standard of care to that possessed in the particular community. Defendant physician was convicted of manslaughter. He had attempted to cure a patient of "a real or imaginary illness" by having the patient fast. The treatment was kept up too long and patient died. In reversing the conviction on other grounds the court pointed out that defendant's behavior was to be tested by the behavior of other physicians "in the locality and community of his practice."⁷

Application of Requirement of "Same" or "Similar" Communities

Defendant was sued for malpractice in the performance of a cervical conization operation in Keokuk, Iowa. Plaintiff secured as an expert witness a physician from Hannibal, Missouri, a city about seventy miles from Keokuk. The expert witness testified that he had observed and performed many similar operations in St. Louis while practicing there, in Hannibal and Quincy, Illinois, a city about 35 miles from Keokuk. He testified that he was familiar with the method used in all the surrounding cities and towns of the same size as Keokuk. He was held competent to qualify as an expert witness.⁸

A verdict was rendered in favor of defendant in a malpractice suit for alleged negligence in setting a broken leg. The evidence of plaintiff's expert witness who testified to the necessity of use of x-ray pictures and the tension method in case of a fractured limb was properly excluded. The witness was a physician from Arbuckle, a town 35 miles away from Willows where defendant practiced. His testimony was based

on his own judgment and not on the customary practice of physicians in Willows or similar communities, of which the witness testified he had no knowledge.⁹

The decision in this case was not purely a geographical decision. This was made clear when the same court a year later held a physician qualified to testify as to the standard of care in Long Beach when he came from Los Angeles, some 25 miles apart. The court in the later case said:

"There is reason in the general requirement that the medical expert must be familiar with the standard of care in the particular locality, in order that the standards of widely separate localities with different practices may be excluded. But to make the exclusion rest arbitrarily upon a geographical line separating two cities of the same county with almost identical kinds of medical service, would be . . . an unjustifiable emphasis on empty technicalities."¹⁰

In a 1941 New Hampshire case the testimony of a physician as to due care in Rochester was excluded since the expert practiced in Boston. The fact that the expert lived in Revere, Mass., which is similar in size and resources to Rochester was not material. While Revere and Rochester were comparable in size, the expert's practice was largely in Boston. Defendant was required only to exercise the skill of the ordinary practitioner of his profession in a locality similar to that of Rochester, and not that of Boston.¹¹

A 1938 California case held that an expert witness from a different city was qualified to testify to the necessity of x-ray pictures.

The court pointed out that it was a matter of common knowledge that

the two cities were located in the same county, were contiguous, had the same general hospital, had their business centers less than 20 miles apart; that in the absence of signs marking the city limits of the respective cities one would be unable to determine the boundary line between them; and that the doctor of both cities belonged to the same medical society, attended the same lectures, and had available the same facilities for the treatment of patients and for keeping abreast of the advances in their profession.¹³

Two communities were held to be dissimilar in another California case. Although the city in which the proffered witness practiced was located in an adjoining county, it had a population of some two million persons and contained many large modern hospitals. Defendant's community on the contrary was a rural community, without the advantages of the larger city. In addition the two cities were 60 miles apart.¹⁴

Many of the cases which on the surface seem to disqualify an expert from "another community" have upon careful examination turned out to be cases in which the expert was actually disqualified on other grounds. Perhaps the expert was unfamiliar with the practice of the community in question as in *Soady v. Washburn*,¹⁵ or lived in a nearby community but practiced elsewhere,¹⁶ or had not the occupational experience required in the particular situation, despite residence in the same or similar community.¹⁷

Extensions of the Rule With advanced methods of transportation and communication some courts are enlarging the area with whose standards of care doctors must comply. Improvements reach the practitioner at medi-

cal meetings, post-graduate courses, and through numerous medical journals. Country communities have access to medical facilities, or to those of near-by cities.

No longer can a physician be excused for improper diagnosis if he fails to avail himself of x-ray facilities of near-by communities, if x-ray is called for. Travel to near-by communities is common and necessary.

A higher level of competence is being enforced.

Coincidentally physicians further afield may be called to testify as experts.

In some cases courts have enlarged the geographical locale of a given community. In one such case a specialist from Chicago was ruled competent to give testimony to the proper practices in an action against a specialist practicing in Davenport, a dissimilar town 175 miles away.¹⁸

In other Iowa cases the court rejected the use of the word "vicinity"¹⁹ or "community"²⁰ in the trial judge's charge preferring instead the more encompassing description of "the same or similar locality."

A more recent case recognized that a physician is required to exercise that degree of care which would be exercised by ordinarily skilled physicians under similar circumstances. It rejected, however, geographical considerations as controlling criteria for determining the "similar circumstances" by which a physician's acts are judged. "The essential factor is knowledge of similarity of conditions; geographical proximity is only one factor to be considered."²¹

In that case plaintiff suffered a fractured leg which was treated by defendant physician. The poor result of the treatment resulted in a \$17,500 verdict

for plaintiff in a malpractice action. The expert witness testified that he was not familiar with the particular practices in defendant's community; that small communities usually had a lower plane of care than large communities; but that in the treatment of fractures of this nature the same standard of care prevailed throughout California. In upholding the competency of the witness to qualify as an expert the Court emphasized the fact that geographical generalizations or localizations do not provide a practical basis for measuring "similar circumstances."

A New York doctor who had never practiced in Connecticut was permitted to testify in a Connecticut case when he testified that the standard practice in the use of drug Pontocaine was the same in both States.²¹

Some of the impetus to do away with geographical requirements has come from the very real difficulties plaintiffs face in securing experts to testify at all. A Wisconsin statute authorizes the admission of expert testimony of a physician from another state when one of the parties is unable to secure testimony from physicians of that state.²² Under the statute a Michigan osteopath was per-

mitted to testify in a Wisconsin case to the due care which a Wisconsin physician ought to exercise where the witness testified he knew of the usual practice of surgery in similar communities in Michigan and plaintiff was unable to obtain medical witnesses in her behalf.²³

And a New Jersey Court recognized the same difficulties of proof when it permitted the testimony of an 82-year-old gynecologist to stand who was licensed in New York but had performed no operation for 20 years. In those 20 years he had witnessed 15 to 20 operations a year and had kept up with medical progress by reading.²⁴ In that case the Court held that the rule that a physician is incompetent to testify as to the standards required by defendant who practices in another community is not followed in New Jersey.

While standards in different types of communities are still widely disparate, legal decisions are requiring higher standards in line with medical progress. And protagonists in a lawsuit are permitted to draw their experts from a wider area than their immediate vicinity, or even similar communities. In some cases familiarity of the expert with defendant's locale is not even necessary.

Summary

1. *A physician is required to exercise that degree of care which would be exercised by ordinarily skilled physicians under similar circumstances.*

2. *One of the circumstances to be considered under this rule has always been the geographic location where physician practices.*

3. *An expert witness to qualify under this rule was required to have*

practiced in the same or similar community, and to be familiar with the medical practices in defendant's community.

4. *The geographical limitations arose in earlier days when standards of practice varied considerably from one community to another.*

5. *The country practitioner was not held to the same standard of care as the city physician, since the rural*

doctor had not the facilities or opportunities for advancement which his city colleagues possessed.

6. Courts, however, even in early days were loathe to confine standards to a particular vicinity fearing quacks might set the standards if only one community were involved.

7. With rapid transportation and advanced methods of communication the reason for the rule is beginning to lose its former force.

8. Rural communities have access to modern facilities. Rural physicians receive medical journals, attend medical meetings and keep abreast of medical progress.

9. Consequently courts are enlarging geographic boundaries from which experts can testify. One hundred and seventy-five miles has not been considered too far in one case. Doctors from one state can testify to practices in another state.

10. While most courts still seem to require the expert to possess familiarity with defendant's community, even this rule was eclipsed in at least one recent case.

11. At least one state, Wisconsin, by statutory law specifically permits the testimony of out of state experts where either party is unable to find experts to testify within the state.

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20. Sinz v. Owens, 33 Cal. 2d 749, 205 P2d 3 (1949).
21. Ardolino v. Keegan, 140 Conn. 552, 102 A2d 352 (1954).
22. Wis. Stat (1951) §147.14 (2).
23. Morrill v. Komesinski, 256 Wisc. 417, 41 N. W. 2d 620 (1949).
24. Carbone v. Warburton, 91 A2d 518 (1952) 11 N. J. 418, 94 A2d 680.

133 East 58 Street

EDITORIALS

Blue Cross: A Public Trustee?

One of the trends which is becoming increasingly evident in negotiations between unions and employers for wages and welfare ("fringe") benefits is the increased emphasis which is being placed on health and medical care. Indeed, from what were then considered small beginnings, such as the formation of the Health Centers of the International Ladies' Garment and Amalgamated Clothing Workers unions, we have seen the development of comprehensive medical services such as the United Mine Workers' overall plan for medical care, which includes not only total medical care for the miners, but also for their dependents as well. Under the Mine Workers' plan, ambulatory and hospital care are provided, and also consultative services and medical care and treatment in such medical centers as the Johns Hopkins Hospital and other well known institutions. And mind you, this is provided without any direct contribution on the part of the miner or his family. This plan is financed by what amounts to a fixed levy on each ton of coal which is mined. This is paid by the mine operators and this cost is passed directly to the consumer. (Pensions and other benefits are also paid out of this fund.)

During the recent convention of the United Steelworkers much thought and discussion was centered around the possibility of the setting up, by that union, of a system of medical care for union members and their families, which would be financed and operated in a manner somewhat similar to that of the United Mine Workers. A comparable type of program has also been seriously considered by Walter Reuther's

PERRIN H. LONG, M.D.



United Auto Workers. Other unions are eyeing such schemes with interest.

Considerations such as these are of the greatest importance to the medical profession, and to hospital administrators and trustees, because they constitute a direct threat to existing Blue Cross and Blue Shield plans. For example, if the steelworkers set up their own hospitals and medical services, it is estimated that Blue Cross would lose a block of a million subscribers. If other unions adopted similar programs, Blue Cross-Blue Shield programs in our country might well be wrecked.

What is back of these moves on the part of the unions is worth exploring. The rising costs of medical care under Blue Cross-Blue Shield programs constitutes one of the chief concerns of the unions. For example, when the Steelworkers made it clear that they were "by no means . . . satisfied with the reasons given for the skyrocketing costs of our hospitalization and medical care programs" they were echoing some of the views expressed by the Commissioner of Insurance for the State of New York during hearings last spring on the question of increasing the rates paid by subscribers for coverage by Blue Cross. It also must be noted that the subscribers themselves have been expressing similar views recently.

This dissatisfaction with the mounting costs of Blue Cross-Blue Shield protection should be considered ominous because these plans have been the best answers found yet to the continued pressures for Federal National Health Insurance and other bureaucratic and

EDITORIALS

restrictive, closed types of health schemes. If Blue Cross-Blue Shield should fail, the outlook for the survival of other types of voluntary insurance plans is indeed bleak.

The answers to the problems faced by Blue Cross are not easy ones to determine. However, one thing appears clear, and that is that Blue Cross must stop thinking of itself as an organization solely conceived for the purpose of paying subscribers' bills to hospitals and realize that one of its first concerns should be with keeping hospital costs as low as possible for its more than fifty million subscribers.

As Blue Cross is now the single greatest source of current income to voluntary hospitals, its role as the public's trustee in hospital affairs should be carefully maintained, and in its subscribers' interests. Blue Cross could and should insist on efficient administration, modern budgeting- and cost-accounting practices, reasonable personnel policies, proper purchasing methods, etc. on the part of its member hospitals. This it owes to its subscribers, and if Blue Cross and Blue Shield are to survive, and the practice of medicine and the provision of medical care in this country not be dominated by bureaucratic and restrictive organizations, then the ultimate consumer of the Blue Cross-Blue Shield services, i.e. the subscriber, must be satisfied. Otherwise the health and medical care of large segments of our population, and the physicians who provide this care will become the captives of a restrictive, bureaucratic system.



THE LONG AND SHORT OF IT

Death from Streptomycin

"From January, 1958, Mrs. Josephine Cleary, aged 39, spent a little over two months in Harefield Hospital, Middlesex, with pulmonary tuberculosis, for which she was treated with streptomycin, P.A.S., and isoniazid. She then discharged herself. On April 9 she was admitted to the Central Middlesex Hospital. Treatment with streptomycin and isoniazid was continued and her tuberculosis was healing well, but on May 4 symptoms of anemia appeared and on May 14 she died. At the inquest on May 20 she was found to have died from pulmonary tuberculosis and aplastic anemia caused by the streptomycin. That aplastic anemia may be caused by streptomycin is a known risk, but it is extremely rare.

"On May 1 Mr. Justice Streatfield awarded 3,000 pounds damages against the Brighton and Lewes Hospital Management Committee for injury to Mrs. Florence Smith, of Withdean, Brighton (*The Times*, May 2), arising out of another streptomycin mishap four years ago. In May, 1954, Mrs. Smith was admitted to hospital with a severe and painful attack of boils. On May 13 a course of 30 streptomycin injections was ordered to be given at intervals of eight hours. She should therefore have received her last injection at 10 p.m. on May 23, but by reason, as the judge held, of negligence on the part of the ward sister she received four more injections than ordered. On May 26 she experienced a sense of giddiness, and it seemed probable that the last injection had caused the damage. Within 24 hours of

From

Your Editor's

Reading

it there had been a sudden and dramatic onset of symptoms. As a result she had now lost her sense of balance, which was not only a severe inconvenience, but was a source of acute embarrassment, because to those who did not know her disability she might appear to be drunk. If the doctor had prescribed the additional injections there might well have been no negligence established in the light of the knowledge of streptomycin obtaining in 1954. To allow four injections which had not been prescribed to be given, was, however, negligence on the ward sister's part, and for her negligence the management committee was vicariously responsible."

British Medical Journal

Death from Penicillin

"On May 7 last agreed damages of 12,500 pounds were awarded by Mr. Justice Stable at Oxford Assizes to the widow of Ernest Knapton against the United Oxford Hospitals (*The Times*, May 8). Mr. Knapton, a farmer, died in the Radcliffe Infirmary after an injection of penicillin, to which he was known to be sensitive. It had been said at the inquest that at that time there had been only 20 other deaths in the country due to sensitivity to penicillin."

British Medical Journal

Preoperative Management of Blood Loss Anemia

"The anemia of chronic blood loss is due to a deficiency of iron. It is diagnosed with ease in most instances. Liver, vitamin B₁₂, folic acid, and other vitamins are of no known value. Transfusions are justified only if: (1) the rate of bleeding is very rapid, (2) immediate surgical intervention is important, or

(3) the anemia per se subjects the patient to a real risk exceeding that of transfusion. Five cases illustrating these precepts are presented. With the exception of Case 5, the cases presented are not unusual. The idea that iron, not blood transfusions, is the treatment of choice for the anemia of chronic blood loss is not new. Yet, it is apparent that the basic precept that iron deficiency should be treated with iron is sometimes forgotten by many physicians.

It is to be hoped that greater awareness of the importance of accurate diagnosis of anemia and of the dangers of blood transfusion, will cause transfusion of patients with chronic blood loss to become a relatively rare event in the foreseeable future."

By Ernest Beutler, M.D.
Surgery, Gynecology & Obstetrics

Nephrosis Due to Mercurial Diuretics

"A case of the nephrotic syndrome following the administration of a mercurial diuretic is described.

The salient histological feature was necrosis and fatty degeneration without calcification of the epithelium in the convoluted tubules. In addition a number of the glomeruli were shrunken.

The significance of the dual lesion in the production of the nephrotic syndrome is discussed.

The observation of increasing proteinuria in patients under treatment with mercurial diuretics suggests that renal damage may be occurring and that prompt steps should be taken to institute alternative diuretics.

By J. Burston, E. M. Darmady and
Fay Strahack
British Medical Journal

Emergency Tracheotomy

Emergency tracheotomy is a life-saving procedure that any physician may be called on to perform. It is an easy procedure if certain landmarks are observed. Bleeding and damage to vital structures in the neck may be avoided for the most part by staying exactly in the mid-line. In essence tracheotomy does three things:

- (1) Lessens the tracheopharyngeal dead space.
- (2) By-passes the naso-oral passages and the larynx.
- (3) Provides easy access to the more remote areas of the tracheo-bronchial tree.

(1) The "dead space" is a phrase used to designate the volume of air in the non-alveolar portions of the respiratory apparatus. The air in the dead space does not take part in oxygen and carbon dioxide exchanges and merely fills the mouth, larynx, trachea and bronchi. It pushes the air ahead of it to the actual oxygen exchange surfaces of the lung—the alveoli. The dead space measures 100-150 cc. Tracheotomy will appreciably lower the volume of this dead space. In those instances where the patient is suddenly too weak to achieve an adequate respiratory exchange and his tidal volume is very low,

a tracheotomy by cutting out an appreciable portion of the dead space will allow the patient to oxygenate adequately on a smaller tidal volume. Examples would be acute respiratory embarrassment in poliomyelitis, crushing injury of the chest with flail segments of ribs, and deepening coma. Many chapters have been written concerning the physiology of the above examples but, in brief, tracheotomy is of use when the tidal volume is so low that effective oxygenation is no longer possible.

(2) It is important at times to bypass the nose, mouth, pharynx and larynx. When obstructive dyspnea becomes severe due to blockage in these areas it is a life-saving procedure. Obstruction in this area may be due to edema, infection, foreign bodies. The actual etiological agents are infinite: diphtheria, severe infectious, croup in children, acute edema (bee sting, penicillin reaction, etc.), bolus of food, coins, crushing injuries to mouth and face.

(3) In those instances where continual heavy secretions plug sections of the lung and where this cannot be managed adequately by endotracheal suctioning through the mouth or nose then

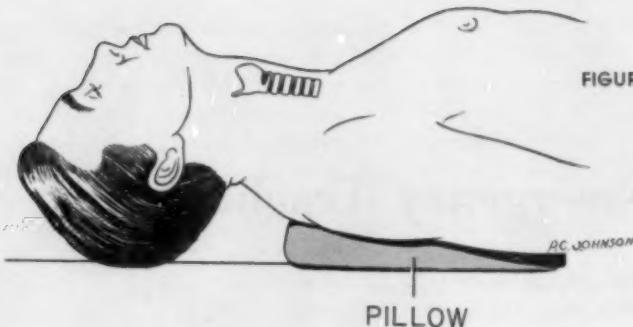


FIGURE 1

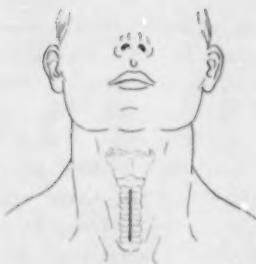


FIGURE 2a
Location of Incision.



FIGURE 2b
Incision Over Trachea.

tracheotomy will be of great benefit. The most common example would be the comatose patient after a severe cerebro-vascular accident.

Technique The two basic requirements of a tracheotomy are (a) adequate assistance and (b) excellent lighting. To undertake a tracheotomy without these two is most hazardous and if done it must be considered well worth the increased risk.

Immediate Tracheotomy The patient is placed on his back with a pillow between his shoulders and the neck fully extended (Fig. 1). In truly emergent conditions where seconds count the trachea is grasped with fingers of the left hand and a vertical cut made starting at the lower border of the thyroid cartilage and carried inferiorly for three inches (Figs. 2a and 2b). All planes are quickly cut exposing the trachea which is likewise slit at the second ring and the cannula slipped in, the obturator removed, and the airway established (Figs. 3, 4, 5 and 6). With the return of oxygen to the circulation, the bleeding points make themselves evident, and these of course should be ligated. If no suture material is available the wound may be packed with gauze to be re-

FIGURE 3
Tracheotomy Cannula and its obturator.

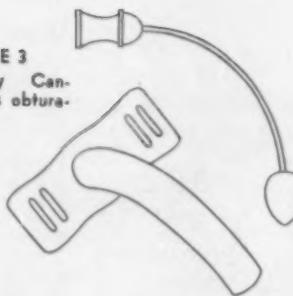


FIGURE 4
Incision of tracheal rings (strap muscles retracted and thyroid isthmus divided).

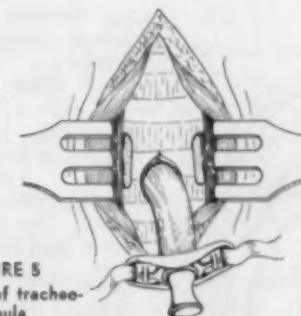


FIGURE 5
Insertion of tracheotomy cannula.



FIGURE 6
Cannula tied in place. (Vertical Incision)

moved in three to four days when the wound will start to granulate in about the tube. (A razor blade for a knife and bent forks for retractors may be used.) This type of tracheotomy is justified only when seconds count. Otherwise an orderly procedure should be carried out.

Non-Emergent Tracheotomy (1)

Patient lying on back with pillows between shoulder blades.

(2) Surgical preparation of neck with antiseptic.

(3) If patient is conscious of pain infiltrate skin with 1% procaine and save some for infiltration of trachea.

(4) Arrange sterile toweling about neck.

(5) Make a low collar incision three inches long, two finger breadths above sternal notch between sternocleidomastoid muscles (Fig. 7).

(6) Cut fat sandwich (fat-platysma-fat) in direction of incision (Fig. 8-#2).

(7) Tie all bleeders encountered so far.

(8) Incise vertically first layer of deep cervical fascia in mid-line for two inches (Fig. 8-#3). By means of finger dissection free this layer from underlying tissue and retract laterally. Don't incise layer more inferiorly than the edge of the wound, transverse veins here are more abundant. (Space of Burns)

(9) Vertically incise second layer of deep cervical fascia; repeat blunt dissection and retract laterally (Fig. 8-#4).

(10) The thyroid gland is now exposed (Fig. 8-#5). The size of the isthmus will determine the next step. If necessary the isthmus may be cut through and the edges suture-ligated. However most of the time the isthmus

FIGURE 7
USUAL LOW COLLAR
INCISION

- A. Sternocleidomastoid muscle
- B. Thyroid Cartilage
- C. Cricoid Cartilage
- D. Low Collar Incision
- E. Clavicle
- F. Sternal Notch

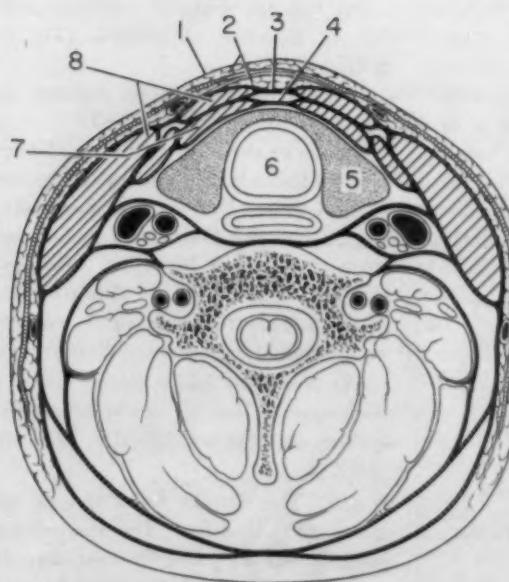
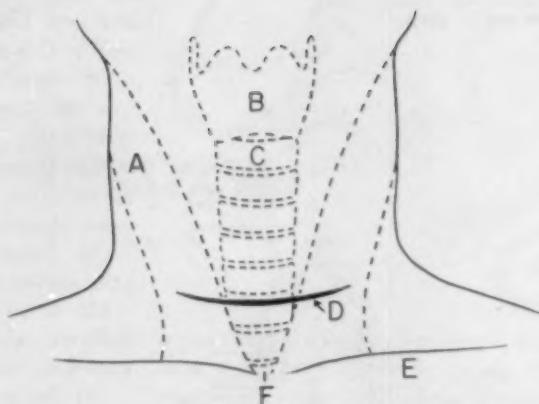


FIGURE 8
CROSS SECTION AT C-7
SHOWING LAYERS MET IN
PERFORMING TRACHEO-
TOMY

1. Skin
2. Fat sandwich (fat, platysma, fat)
3. First layer deep cervical fascia
4. Second layer deep cervical fascia
5. Thyroid
6. Trachea
7. Sternothyroid in second layer
8. Sternothyroid and sternocleidomastoid in first layer

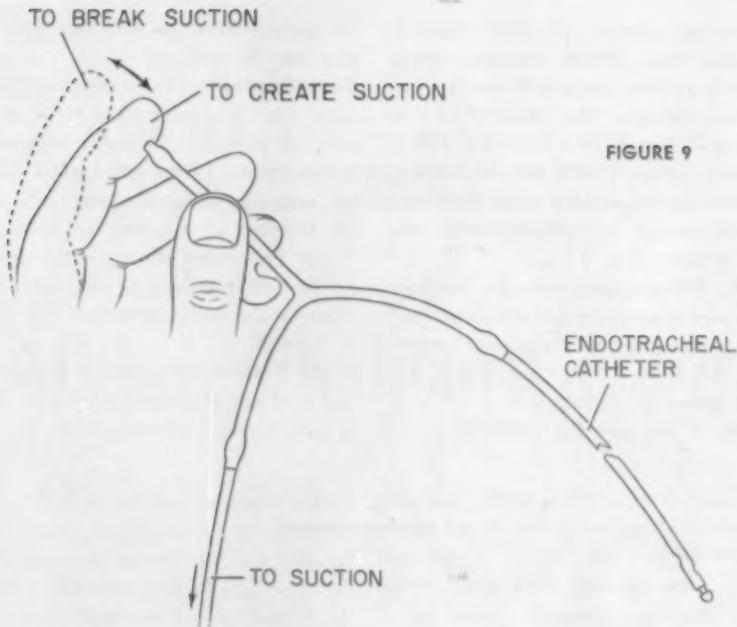


FIGURE 9

may be pushed up or down and the tracheal rings exposed (Fig. 8-#6).

(11) The second, third or fourth ring is grasped with a clamp (or towel clip), lifted up, and a small square cut out, perhaps $\frac{1}{2}$ cm. by $\frac{1}{2}$ cm. By holding the small square to be removed it is unlikely that the piece of cartilage will drop down into the trachea. A cruciate incision may be used if desired.

(12) The appropriate size cannula is then inserted under direct vision. This will vary from #1 for a newborn to #3 for a small child to #5 for adolescents and women to #6, 7 and 8 for men. The obturator is removed and the inner tube inserted and the apparatus fastened by a ribbon about the neck.

(13) The wound may be packed, left

open, or sutured loosely as the situation may warrant.

Aftercare This most important phase is the most neglected. There are several important features.

(1) A moist gauze should be kept over stoma. If oxygen is administered, it must be humidified and directed across opening of cannula *not* down into it. A blast of oxygen against the tracheal wall will produce a severe bronchorrhea.

(2) Inner tube to be changed daily. Large outer tube may be changed after four days every two to three days if desired by physician.

(3) Endotracheal suctioning becomes of increased importance because the patient has no ability for an effective cough. Sterile equipment, extreme gentleness, and limiting suctioning to

alternating periods of thirty seconds suction, one minute oxygen, thirty seconds suction, etc., will do the job without damage. An effective way to control suction is by means of a Y tube between catheter and suction tubing. By placing finger over extra limb suction is created, by releasing it the suction broken (Fig. 9).

(4) When appropriate the tracheotomy tube is removed and the wound will heal rapidly despite the always present infection.

If there is doubt, put a cork in stoma of the tube for a day or so. If

the patient breathes well this way the tube may be removed.

Complications (1) Hemorrhage: most often from communicating veins of the anterior jugulars. Careful hemostasis is important. Persistent bleeders should be suture-ligated. Packing will stop the bleeding if it is only an ooze.

(2) Late voice effects: if the cricoid or thyroid cartilage is cut, late voice changes are quite common. Use rings 2, 3, or 4.

(3) Vertical incisions are disfiguring and lead to a prominent tense scar. This is to be avoided where feasible.

AN EXERCISE IN DIAGNOSIS: *The Case Reports*

In addition to our regular quota of original articles and departments, this issue, and every issue, contains selected Case Reports. You will find them on page 1565-1574. We recommend these studies as interesting and stimulating.

This Medical Center utilizes its own two-way radio communication, covering an area in excess of 50,000 square miles.

Albany Medical Center

One of the largest medical centers in the nation, the Albany Medical Center, consists of the 670 bed Albany Hospital, Albany Medical College, and the Albany Medical Center School of Nursing.

Within a few hundred yards of this nucleus are the 1005 bed Albany Veterans Administration Hospital, the central laboratories of the New York State Department of Health, and the Albany College of Pharmacy. A close relationship exists between all units of this integrated health center which serves 16 counties of northeastern New York State as well as areas of Massachusetts, Connecticut and Vermont.

The 70 bed Anthony N. Brady Maternity Hospital is also associated with the Center, bringing a total of 1745 beds within or affiliated with the Center.

In addition, there are a number of community agencies associated with the Center which have important roles in certain residency training programs. One such specialty clinic is the Child Guidance Center for the treatment of children with psychiatric and neurotic

illnesses. Other affiliations include the Study Center for Learning Disabilities, the Cerebral Palsy Center and the Northeastern New York Speech Center.

The Albany Hospital maintains services in all the specialties including tuberculosis, mental and communicable diseases. The autopsy percentage for last year was 66%.

Development The founding of the Hospital in 1849 and the Medical College, one of the colleges of Union University, in 1839 provided a solid foundation on which faculty and program have been developed into the present Medical Center.

To a great extent the Center owes its very being to the energetic Dr. Alden March (1795-1869), one of the foremost surgeons and educators of his time. It was through his leadership and tireless devotion that the need for medical education and for a Medical Center in the Albany area was recognized. In its responsibility for growth in medical knowledge, the Center holds to the ideals of its founder: "The value of our pursuits . . . can be estimated only by



Brain pathology session at Albany Hospital.

the value of life itself, and of that which alone endears it to its possessor —health."

In 1902 the Albany Hospital had the distinction of being the first in the country to establish psychiatric wards as an integral part of a teaching hospital.

Maintaining the Center's plan of leadership through modernization, a multi-million dollar construction program, begun in 1957, will provide an additional 135 beds, classrooms, laboratories, nurses residence and x-ray and physical therapy units.

As the governing boards of the Center have indicated: "Every possible effort is made to provide maximum assistance to the doctor in caring for his patient."

Veterans The Albany Veterans Administration Hospital, a modern general hospital, serves approximately 826 general medical and surgical, 134 psychiatric and neurological and 45 tuberculosis patients.

In addition to the extensive clinical

laboratories, the hospital has a well equipped general research laboratory which has been developed to encourage and support research projects of the hospital staff.

All members of the house staff of the two hospitals are appointed members of the teaching faculty of the Medical College. These appointments emphasize the educational character of their position and widen the possibilities for research and special studies. The resident is in charge of the particular service to which he is assigned under the supervision of the chief of service and staff members. He has under his own supervision the interns and medical students assigned to the service.

Patient Care In the Medical Center, paying patients are also used for teaching; the resident is expected to take the forefront in medical care for all patients assigned to him. This is accomplished with the full support of the responsible attending physician.

Residents plan for accurate work-ups

for the patients, arrange for proper consultations and personally supervise the care of the patients. Staff physicians encourage rapport between the residents and their patients—in effect, the resident is the “associate” of the staff physician in the care of his patients. By including private patients in the teaching program, the house staff members are able to become familiar with the problems of patients with varied social and economic backgrounds similar to those they will later meet in private practice.

Attending Staff The educational program at the Medical Center has been instrumental in attracting high caliber, full-time instructors, as well as part-time instructors and fellows in specialized fields. The chairmen of the clinical departments in the Medical College are the chiefs of the corresponding service departments in the Albany Hospital—most of these are full-time men.

A group of full-time physicians supervises the residency training and the patient care at the Veterans Administration Hospital.

All of these teachers have appointments in the Medical College.

Both hospitals, of course, have a very active group of attending physicians and consultants, who are members of the Medical College Teaching Staff and are board certified. Since the two hospitals together represent a major referral center for a large surrounding area, experience is gained in the management of acutely ill patients and in a wide variety of diagnostic problems.

The newcomer is often quick to remark that he gets the feeling that big things are developing at the Medical Center. According to administrators, this is a contagious reaction which results from a “dynamic approach” to

medicine engendered by the Medical Center staff.

Educational Over and above the teaching opportunities in connection with the daily rounds on each service ward, there are almost daily teaching conferences of various sorts. A free interchange of personnel between the two hospitals occurs at these conferences. According to the Medical Director of the Albany Hospital, Dr. Ferdinand Haase, Jr., “We see our responsibility to train not only young physicians but to also provide the stimulus by which the attending staff advances its own medical knowledge.”

Conference content includes didactic medical presentations on a variety of subjects; presentation and discussion of available clinical material; clinical pathological conferences and medical pathological discussions; lectures in pertinent related fields; and courses of instruction in electrocardiographic interpretation, x-ray interpretation, fluoroscopy, and others.

Research Research is an integral part of the Medical Center’s program, with a wide range of projects being conducted in many fields of importance. For example, studies on circulation, cancer, liver cirrhosis and the toxic action of bromides are currently under way. Investigators are able to draw on the many resources of the Center, lending depth and diversity in approach.

Since 1949, encouraging progress has been made in the development of plastic valve implants for the aortic and mitral areas of the heart. The Cardiovascular Health Center, a long term study for the early detection of degenerative cardiovascular disease, and the Cardio-Pulmonary Function Laboratory are programs in which diagnosis and research are car-



ried on concurrently.

A fluoroscopic image intensifier is being developed by the Medical Electronics Department which will enable fluoroscopy to be carried on in lighted rooms under reduced x-ray beam current; this apparatus will have remote viewing and high speed photographic application. The medical use of xeroradiography was developed and perfected by the Department of Radiology of the Albany Hospital in cooperation with the New York State Commissioner of Health. Xeroradiography is a totally new method of recording x-ray images, which admirably lends itself to use in the emergency hospitals being strategically located across the country for disasters and atomic warfare.

Liaison between the Medical Center, the V.A. Hospital and the New York State Laboratory on research enlarges the sphere of this activity and, through its advanced technology and methodology, enables the house staff to gain assistance in difficult diagnostic problems.

Family Care Residents from several departments serve on the Faculty Advisory Committee of the Family Care Program. In this program, third year medical students assume the responsi-

bility of serving as the family physician for a carefully selected family. This part of the Medical College curriculum permits the resident as well as the student to gain experience in both the social and home management aspects of illness.

Postgraduate A valuable part of residency training includes participation in the extensive post graduate teaching sessions held weekly at the Medical College.

Albany serves as the center of an area having a radius of from 150 to 200 miles and containing a large number of practicing physicians. A Postgraduate Program developed for these physicians gives residents an opportunity to gain information concerning the solution of problems encountered in practice.

Radio and TV The Medical College also contributes to residency training in other hospitals, one such contribution being a novel method of presentation, utilizing two-way radio communication, so that physicians in remote hospitals may direct questions to the Medical College faculty by radio and receive their answers immediately during a clinic presentation. Residents in these hospitals have the same opportunity to participate in these teaching clinics.



Above is the Albany VA Hospital (2), and at left are Albany Medical Center (1), New York State Health Department Laboratories (3), Albany College of Pharmacy (4), and Albany Law School (5). Right, lung capacity being determined prior to surgery. Below, an electroencephalographic examination is conducted by staff doctors.





Above, Dr. E. V. Crabill researches the effects of circulatory changes on hair growth. Below, Staff doctor gives reassurance to a young orthopedic patient.



WAMC is the world's first radio station owned and operated by a medical college and has a coverage area in excess of 50,000 square miles. Obtaining information by two-way radio versus coming to the Medical Center has, during the past two years, saved these physicians more than 500,000 miles of travel which would have required approximately 17,000 travel hours.

Selected operations and demonstrations are easily visualized by use of closed-circuit television programming within the Medical Center.

Library The Medical College library contains 28,190 volumes and receives 613 periodicals. In addition, departmental libraries also contain resource material for the house staff.

Also, the services of the nearby New York State Medical Library, one of the most complete medical libraries in the world, are immediately available by twice daily courier service.

School of Nursing The Albany Medical Center School of Nursing is

one of the largest schools in the State with more than 250 students enrolled. Two classes, one in March and one in September, are admitted each year.

The Russell Sage College School of Nursing and the Albany Training School for Practical Nurses maintain the clinical aspects of their program at the Medical Center.

Clinics The Albany Medical Center Clinics operate active outpatient services in all departments for medically indigent patients. Total clinic visits for the year 1957 were 28,520.

Emergency The emergency service covers 22,000 visits per year. Although under the direction of the Department of Surgery, residents from all services see Emergency Room patients whenever it is indicated that they be called.

Religious Facilities Services of various faiths are held in the hospital chapel, and within walking distance of the Center, churches of many denominations may be found. Chaplains representing the Protestant, Catholic and Jewish faiths are always available for patient or employee consultation.

House Staff Association The House Staff Association elects its own officers and provides representation on prob-

lems that come up during the year. Activities, such as outside guest speakers and social programs, are arranged by the Association.

Senior residents join in a monthly luncheon meeting with members of the administration and medical staff for discussion of the many aspects of the hospital's program.

Recreation Tennis courts are maintained on the grounds for use by the house staff. During the year several picnics and outings are arranged. Several golf courses are also within easy reach of the Center.

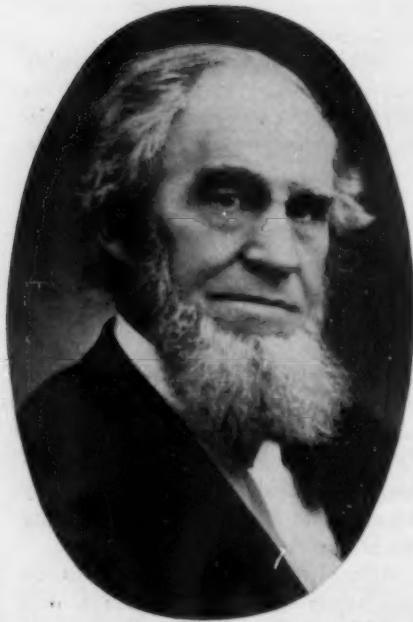
Within one hour's driving time from the Center, the beautiful Adirondacks and Thatcher Park provide excellent facilities for swimming, yachting, horseback riding and winter sports. Nearby hunting and fishing are rated among the best in America.

Albany, with a population of 140,000 and capital of the state, has a dry, healthful climate with moderate seasonal temperatures.

Albany offers most of the cultural advantages, such as museums, concerts, and incidentally, is located at the hub of many of the State's summer stock companies.

CORRECTION

In the article "Allergic Management" (MEDICAL TIMES, October 1958), an uncorrected printer's error on page 1205 altered the meaning of a statement by the author, Elmer D. Gay, M.D. The sentence in question should have correctly read as follows: "Some cases get excellent results from Bronkephrine (one-half cc. dosage) several times daily as a substitute for epinephrine, and this preparation does not cause increased blood pressure."



MERRELL

The secret of William Merrell's success as a drug manufacturer was not his above average scientific ability or his tremendous energy. As his family and workers well knew, it was the human touch.



of Cincinnati

In June of 1828, William Stanley Merrell joined the ranks of Cincinnati pharmacists by opening a modest shop on Western Row, on the edge of town and across from a woodland.

Cincinnati was then a western outpost that was growing at a brisk pace; in the space of a few years its population had doubled, reaching well over 20,000 and creating a housing shortage. Settlers came along the Ohio River, the city's commercial lifeline and link with the East and South.

Urban and rural elements flourished side by side. Horse-drawn carriages, wagons and carts rattled over unpaved streets, sometimes having to give way to hogs and cows being driven through town. A newspaper, the *Centinel*, had been founded in 1793, a singing school in 1800 and a symphony orchestra in 1825. Life was not without the mellowing influence of culture.

Merrell had come to the Ohio city from New York State. His new enterprise represented a great deal more than his investment of \$200 (though the money had been hard enough to scrape together), for at the age of 30 he was still seeking to establish himself in a field where he could use his scientific training.

High Ideals He was a man of high ideals who was in the habit of attending church three times on Sunday. When in his twenties, he had eschewed such popular diversions as balls and kissing bees, and later was a member of a church group that pledged "entire ab-



Merrell plant at Fifth and Butler was completed in 1894, the same year that stockholders authorized an increase in capital stock to \$250,000. At this time the Cincinnati drug company's sales territory extended west to the Pacific Coast.

(Vol. 86, No. 12) December 1958



Men Who Made the Medicine

stinence from the use of ardent spirits, except for medicine."

This firm morality was coupled with superior mental and physical abilities. Though Merrell was only five feet three and 120 pounds, he could lift several times his own weight.

Mentally, he was in the heavyweight class. A scholar throughout his life, he was keenly interested in chemistry, mineralogy and astronomy. He was in his late seventies when he read to a medical group his recently written paper on "the Causes of All Contagious Infections & Most Epidemic Diseases and Especially of the 'Milk Sickness,' which I hold to be minute animal or vegetable life capable of self-propagation."

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Photo dating back to the 1890s shows George Merrell, founder's son, in his office. He died in 1914, after 52 years with the firm. In his last years he spearheaded the rebuilding of the company.



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The trip required steady traveling from February 3 till March 25, by sleigh, wagon and barge. The job, in a retail establishment partly owned by a Major Stanley, came to an end a few months later with Stanley's death. Merrell also lost out on his share of the major's estate because of a technical error in the witnessing of the will.

Though the young man returned to New Hartford, Cincinnati had left a lasting impression on him. He returned in 1820 and 1823 in hopes of establishing himself in a career, but each time suffered disappointment.

Travels A May 1823 entry in the diary shows that conditions of travel in those days left much to be desired.

"I reckoned the road from Cleveland to Wooster as bad as could be anywhere found, & my companion swore it was bad as could be, but I find on this public 'state road' sloughs worse than any there. The clay is trodden up nearly belly deep & is now just stiff enough to suffer my horse to sink to the bottom and then hold him with all its tenacity."

Attempts to get a teaching position took him to Kentucky, and the possibil-

ity of manufacturing porcelain took him to Illinois and Missouri. In November of 1825 Merrell returned to New York, but two and a half years later was again on his way to Cincinnati, this time to start a drugstore.

Merrell's first sale brought him three fippenny bits (about 19 cents) and sales for the first week totaled \$3.07. A few months later the shop was grossing about \$30 a week, which enabled Merrell to hire a clerk. The young fellow was paid \$4 a month plus board.

Though Merrell had wanted to be a physician, he found the profession of pharmacist a satisfying one. His great interest in the scientific end of the business turned the shop into a manufacturing pharmacy, and soon he was shipping his products to doctors in other counties and states.

Marriage Though the business and his continued study of chemistry took up most of his time, he had many friends and enjoyed being with them. Nor was he too busy for romance. In 1831 he married a young lady named Mehitable Thurston Poor.

They had 11 children, the youngest of which was born in 1856. At the time, the family doctor was out and the nurse who had been engaged was on another case. William delivered the baby.

He was an affectionate parent and much concerned with fostering his children's character development.

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they can call their own, & inculcates the idea of earning."

The sons became respected professional and business men. Stanley, the eldest, had a drugstore in Covington, Kentucky, across the river from Cincinnati. George became president of the Merrell Company, and William was a promising member of the family business when he died at age 25. Albert eventually became professor of chemistry at the Eclectic Medical College of Missouri and also received the degree of M.D. there. The youngest son became a lawyer.

At the age of 77 Merrell still accompanied those of his sons and daughters who were at home to numerous social and cultural events. He kept up a lively and affectionate correspondence with those who had moved away. The business in later years brought occasional father-son disagreement on certain financial matters, but the elder Merrell, motivated by paternal tenderness, was willing to yield.

Troubles His affection and sympathy, extending to more distant relatives, to friends, and often to strangers, some-

times brought results which were not always good for his business. In 1856, for example, he employed a young relative who was out of a job and who had "kept himself straight . . . his family are comfortable and happy."

Two months later, however: "J—— still here but as we have help enough without him and we have strong fears of his honesty, which are confirmed by the conviction of all the under clerks, we shall not keep him only through this week."

In 1857 a nephew came to work at the store: "We do not really need such an assistant, but he has become embarrassed in his pecuniary circumstances & cannot meet his engagements. Has to sell his place . . . for what he can get, & is broken down & discouraged, so we employ him out of sympathy to him & family." Three months later: "A new business trouble is at hand, and Nephew —— has got [financially] embarrassed & . . . we must therefore buy his property. . . . This is a great sacrifice to us."

December 1857: "Wesley S—— sues me on my endorsement to Dr. T——. See T—— & he promises to protect it



certain. An unlucky act of friendship—which past experience should have taught me to avoid."

During Merrell's more than 82 years, he had periods of less-than-perfect health, but for the most part was remarkably strong and well. His diary in 1860 records:

"My health is uniformly better than when 50 years younger and my mind equally active & I think capable of even greater labor or acquirement than at the age of 20. . . . My hair is but little frosted, beard white on the chin & neck, a little bald on the crown."

His daily schedule continued throughout his sixties to include "Rise not till 7:30 at this season [winter]. Family worship by reading the Word & remarks & prayer. Then breakfast at 8. Thence to business. . . . Home to dinner at 1:30. To supper at 6. Then to store again & write [business correspondence] till 10 or 11. Home, read news a while & to bed from 11 to 12." His "lethargy" distressed him throughout a lifetime of such hours.

On becoming 77, Merrell noted that this was "generally considered a fair

old age, but several years below that of my father, and some other members of the family. My health is now very good. I eat with a relish and sleep well. I go to store [Merrell Company] daily at between 9 and 10 A.M., home at 4 P.M., to dinner."

In his seventies he suffered several injuries, two falls on early morning ice, and a violent dashing to the ground by a fast driven horse and buggy. He made a good recovery in each case.

Encounter An earlier injury, in 1861, resulted from an encounter with a fellow citizen who evidently did not share Merrell's views on the use of ardent spirits.

"Started home from the store about 11 P.M. and as the ground was covered with sleet I took the middle of the street on the street R.R. track. Between Race and Elm found a small man staggering in the way. Passed him, but after tumbling down he came on after me & trod on my heels.

"I hastened along, and he followed again running upon me. Just below Central Avenue he fell down right in the car track & a car was coming up but little below. I hastened on & stopped to speak to the driver to caution him not to run over the fellow, but while doing so he came up and seized hold of me and we both went down . . . I below and he upon me.



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This 1912 photo shows the analytical laboratory staff at work. The department was established by George's son, Charles G. Merrell, when he entered the company. Charles graduated from the Massachusetts Institute of Technology in 1888.

 **Men Who Made the Medicine**



Finishing room (top) as it appeared in the mid-twenties. At left, sturdy youths of an earlier period work at drums in which pills and tablets were given coating.

"I soon turned him, at the same time rolled farther from the then passing car. While struggling to get loose from him, as he held on to me, another young fellow ran out from the barracks opposite, pulled me over and asked what in h—l I was doing with that man and before I could answer, struck me a violent blow with his fist in the mouth and then (discovering I think by my voice who it was) ran off into the house.

"I got up and cried, 'Watch, Watch' and soon two watchmen arrived. I told them of the affair and they took the drunken fellow that threw me down to the station house. The other I could not identify. Found that I was badly hurt."

Recovery from a sprained shoulder took many weeks. On a request from the young inebriate's mother, and with a letter of good conduct from the man's employer — but against Merrell family advice — Merrell had the young man released from jail.

Life and Times Politics in early nineteenth century Cincinnati sometimes turned into something our Founding Fathers would have deplored. About the presidential election of 1824: "Today is election for Electors of President and Vice President, . . . In the afternoon much unfair play was used. A mob of the adherents of one of the candidates was formed who excluded all from the polls except the friends of their favorite. Thus some were kept away and others were compelled to reach the polls by stratagem by holding up to view a ticket for the Jackson electors, and then when reaching the polls voting for Adams or Clay."

In March, 1825, Merrell recorded an

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unusual Sunday disturbance: "After attending to my duties in the Sab. School I remained in the gallery where our school is tonight that I might preserve good order among the children that remained during service. Just as the sermon commenced a throng of children 2 or 3 hundred in number pressed into the gallery in a most disorderly manner and pushed forward to the front part of it & after remaining not more than ten minutes began to go out again and before service was ended were all dispersed. The cause of this disturbance I was quite unable to guess till after meeting when I learned that Gen. And. Jackson had just arrived in the city and at that time had entered the church below."

Cholera hit the city several times. In 1832: "At 9 o'clock I went up into the city on business and on my way to my house fell in company with our esteemed neighbor Mr. I. Cavalt. He was then in his usual health. On my return, was told that he had the cholera. After dinner [noon] went in to see him, then in the collapsed stage of the disease, & at 6 P.M. he was a cold & livid corpse."

Religion An influence that strongly affected the drug maker's life was religion. During the 1820s, a period of stirring revivalists, Merrell listened to the stinging calls to forsake sin and hell. Spiritual thirst led him from church to church every Sunday to hear the sermons of Methodists, Presbyterians, Baptists, Roman Catholica. His zeal caused friends to urge him toward theological school.

Finally, he found a haven with the Swedenborgian Church and eventually



became one of that group's strongest and most respected members. He taught Sunday School from his twenties until at least the age of 68, officiated at funerals, preached or read sermons in the minister's absence, and was for many terms president of Cincinnati's Swedenborgian Church. Merrell acknowledged in his later years that "I am sustained only by an abiding trust in Him who has hitherto brought me safely through the storms of life."

For many years he was a patron of the musical life of the city. In 1875 he could not resist the excitement of the city's great May Music Festival, got a last-minute ticket which provided him only with standing room. He heard the music, then went home exhausted, having "paid quite too dear for the whistle."

The previous year he'd gone to see "P. T. Barnum's famous 'Hippodrome' to satisfy my 'boyish' curiosity & perhaps gain some knowledge. I was well entertained but one visit to such a show is enough for me."

Honors Merrell received his A.B. degree at Hamilton College in 1823, and in 1851 an A.M. degree that he might have received a quarter of a century earlier had he requested it. The Eclectic Medical College of Philadelphia gave him an honorary degree of M.D. in 1862 as well as making him a trustee. In 1871 a similar degree was bestowed on him by the Eclectic Medical Institute of Cincinnati, of which he had been president of the board of trustees since 1864.

When the new Eclectic Medical Institute had been organized in 1846, its founders asked Merrell to undertake the

improvement and preparation of their medicines. His close connection with eclectic medicine did not, however, distort his perspective on its place among the healing arts. He stated in a minority report, in 1869, to the Ohio Eclectic Medical Association, that "Eclecticism has fulfilled its mission and it is not desirable to get up a book of that kind [a pharmacopoeia] which would be a barrier to approaching union."

In the 1840s William Merrell did original research on the resinoid and alkaloidal principles of botanic drugs. He set a standard of pharmaceutical perfection that gained world-wide respect for the Merrell firm. In 1877 his company was first to make salicylic acid available to the medical profession in America.

Business The pharmaceutical business Merrell founded makes a fascinating story in itself. Through it runs the pattern of his persistent chemical experiment, and his patience and fortitude in face of adversity.

His humanitarian nature influenced his business methods, often adding to the pitfalls encountered in a time of economic uncertainty. Diary entries on many occasions give the modern reader cause to be grateful for our modern banking system. 1857: "News that all the Phila., Baltimore, & Boston banks have suspended specie payments. A terrible crisis in money matters. Think it will result in a general suspension through the U. S. similar to that of 1837. How business men are to meet their obligations it is hard to see."

Two weeks later: "No money on hand except that of suspended banks. Send

out bills against . . . but collect nothing. Collect of a mercantile house \$12 and borrow \$30, to distribute to workmen tonight. A gloomy time in the monetary world." 1860: "Banks in Phila., Va., & Boston suspended & a general derangement of financial affairs seems impending and we are not well prepared for it." 1861: "Business through the week has been very fair, but customers send Ill. & Mo. & Southern money which is from 5 to 20% discounted, and we have to share at least the loss on it."

1862: "The raid of Morgan into Ky. has produced a great excitement & consternation and has doubtless had some effect on business." 1868: "Money comes in slowly and our sight drafts which we got discounted on 22nd have many of them come back unpaid—to more than half the amt. sent out. Never for two or three years have we had so

large a proportion not accepted & honored. Money matters are exceedingly stringent all over the country, more so than since 1857."

Despite the crises, the business managed to grow. Orders came from all directions of the compass, and the first big order from overseas was filled in 1862. Merrell's diary stops in 1875. On September 4, 1880, he died.

A few months later, 52 years after the firm's founding, the company was changed to a corporation. In the twentieth century, 1938, the Vick Chemical Company, to diversify its enterprise and to provide more far-reaching service to physicians acquired ownership.

Today in 1958, dozens of plant-expansions later, the long and interesting history of the founder still infuses The Wm. S. Merrell Company with a special character all its own, a quality that visitors rarely fail to notice.

**NEXT
MONTH** | *The story of William Ayerst and his three colleagues. They pooled their ideas and talents to make pharmaceutical history in Canada.*

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MEDICAL TIMES



*Prepared especially for Medical Times
by C. Norman Stabler, market analyst
of the New York Herald Tribune*

INVESTING for the Successful Physician

Business activity this quarter is running at the year's best rate and the prospect is for even greater activity in the new year. Prognosticators are wary in their predictions of the rate that may be attained in the first quarter because they realize much of the current improvement is a matter of momentum.

Emphasis is being placed on the automobile industry, not only because of its size and its close link to a host of other industries, but because it was the slump in sales of 1958 cars that got much of the blame for the slack business conditions of this year's first half.

Judged by the reception being accorded 1959 models, the outlook is bright. Recent shows staged by manufacturers indicate the public is in a buying mood and that it is pleased with the product.

Production of cars is expected to

maintain a fast pace for the next few months. Part of this must be ascribed to the fact that companies lost considerable time in October because of strikes. As a consequence they must catch up. Reports from appliance manufacturers indicate they too are enjoying the recovery that has made its appearance in the auto field.

Total industrial production has come back rapidly since the recession of August, 1957 through April, 1958. Throughout this period one problem was inventories. They had been amassed in great volume by corporations and most industrial users and, with the outlook uncertain at that time, the tendency was to work off the inventory rather than do new buying. Excess inventories appear to have been pretty well liquidated. Manufacturers' new and unfilled orders have been rising.

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In almost all cases predictions for the new year are optimistic. "Architectural Forum," reports an estimate, made by Miles L. Colean, noted construction economist, that calls for the first \$50 billion building year in history. He puts the total at \$51.6 billion, a three per cent rise over 1957 which the Forum calls a "whooping expansion in an industry that accounts for more than 10 per cent of total United States production."

Tom Campbell, editor-in-chief of "Iron Age," has predicted steel production in 1959 will reach 110,000,000 net tons, against around 85 million for 1958. This total of 110 million tons has been exceeded by the steel industry only in the years 1957, 1956, 1955 and 1953.

The automobile industry has set a goal of 5,500,000 autos in 1959 against around 4,400,000 for 1958, and Frederic G. Donner, new chairman of General Motors Corp. believes that "is a good figure as the economy is now running."

Standard & Poor's notes that trade sources estimate petroleum demand in 1959 will be up about four per cent from the retarded 1958 rate. The increase for the current year is placed at 2.3 per cent, somewhat below the average of recent years.

Much importance is attached to the "Architectural Forum's" prediction since building is regarded as one of the most important indicators of the nation's prosperity. Even allowing for price rises, physical volume of building will rise by about three per cent overall, with public construction giving the biggest boost—up 8.7 per cent to \$16.8 billion.

The "Forum" estimates that outlays for new single-family homes in 1959 will

total \$13.7 billion with non-farm housing starts reaching 1,155,000 compared with 1,060,000 this year. Private educational building is expected to rise by nine per cent and public by 3.4 per cent. No change is seen in church building. Highway construction is seen as rising 13.8 per cent to \$6.6 billion "and for at least a decade there should be a mounting level of highway expenditure."

OUR RESPECTIVE TAKES

Uncle Sam collects income taxes from corporations, and from individual investors on the dividends or interest they receive.

Indications are the tax collector is going to find the pickings rather poor in the case of the former, when the books for the year are finally closed, but he'll do relatively better with you and me. The recession of the early part of the year cut deeply into corporate profits, but dividends have held fairly well. So the corporations, on the whole, will pay less. You and I, well—we'll pay.

Figures from Standard & Poor's indicate the situation, come December 31, will stand somewhat as follows:

Corporation profits before taxes in 1958 will be \$35.5 billion against \$43.4 billion in 1957. That's a decline of nearly \$8 billion.

Corporations' tax liability will be

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\$17.7 billion against \$21.6 billion in 1957. That's a decline of around \$4 billion.

Profits after taxes will be around \$17.8 billion against \$21.6 billion in 1957. That's a decline of around \$4 billion.

But dividends — the stockholder's share — will be around \$12 billion, against \$12.4 billion, the record, in 1957. That's a decline of only \$400,000,000.

In other words, Uncle Sam's take will be cut \$4 billion while stockholders' take will be down only \$400 million. The good Uncle takes a slap ten times as hard as the stockholders. And that's, of course, one of the contributing factors to the \$12.2 billion deficit for this fiscal year.

The reason for this situation is that corporations in 1958 will pay out about 67 per cent of their profits in dividends. In 1957 they paid out 57 per cent.

The \$12 billion in dividends estimated by Standard & Poor's for this

year is the same amount paid out in 1956 and up to that time that was a record.

Back in 1929 when the payout was 69 per cent, stockholders received \$5.8 billion in dividends out of \$8.4 billion of net profits after taxes.

The reason given for the bigger payout expected this year is that there is less pressure to retain profits to meet financial requirements of business. Plant and equipment expenditures in 1958 are estimated down about 16 per cent from 1957.

Standard looks for a considerable reduction in the number of extra dividends this year.

"Being a variable factor," the statistical firm notes, "these payments will reflect this year's drop in corporate profits much more so than regular dividends, although there is reason for believing that the improved business atmosphere will cause some companies to be more liberal than they might have been some months ago."

WHERE DOES THE MONEY GO?

With Christmas just around the corner, you may wonder what is happening to all that money saved through Christmas clubs and in the banks or other institutions, so that parents may remain solvent after the bills come in.

The corporation which has the official title, "Christmas Club A Corporation," to distinguish it from numerous other savings organizations has made an effort to determine where the money goes. It has plenty to work on, for it operates through 7,900 financial institutions which have 13,000,000 individual Christmas Club members and this year they received \$1,365,000,000.

"This hike in savings, in spite of depression or inflation threats, reflected the trend of the people's savings habits," said Edward F. Dorset, President.

HOW THE MONEY WILL GO

Christmas purchases	\$420,966,000
Permanent savings	390,800,000
Taxes	136,910,000
Insurance premiums	126,808,000
Year end bills	77,668,000
Home furnishings and improvements	75,621,000
Miscellaneous	56,374,000
Education	41,360,000
Mortgage payments	38,493,000
	\$1,365,000,000

when the problem is dandruff

BEFORE

Capsebon

AFTER

Capsebon

WHETHER DANDRUFF IS:

1

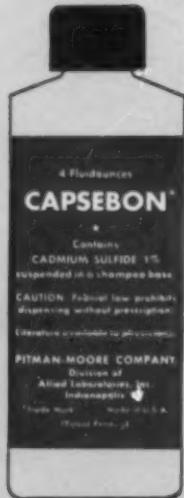
an incidental finding

2

a presenting complaint

3

a resistant case



CapsebonTM

1% CADMIUM SULFIDE SUSPENSION

safely and effectively

eliminates the dandruff and
controls the seborrheic
condition. Thus it relieves the
patient of discomfort and
embarrassment while it
cleanses and grooms the hair.

Capsebon

*a cosmetic, therapeutic shampoo that
your patients won't complain about*



safe

"No instances of primary irritation or sensitivity reactions were encountered . . ."¹

"Toxic or allergic reactions were absent . . ."²

effective

"Of eighty-four patients treated for seborrheic problems in the scalp with . . . cadmium sulfide shampoo . . . seventy-nine obtained good to excellent results."³

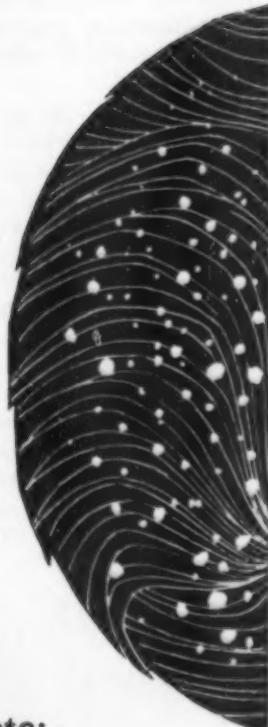
"A new preparation containing 1% cadmium sulfide was used in the treatment of 300 patients with seborrheic dermatitis of the scalp. 80.7% of these patients were improved after being treated."³

**cosmetically
acceptable**



"This product is remarkably well accepted by the patients as an excellent, foamy shampoo, free from any objectionable odor . . . an elegant shampoo."³

"After shampooing with cadmium sulfide the hair appeared to be adequately cleansed, was soft, and no unpleasant odor was noted . . . Most patients found the preparation cosmetically acceptable . . ."³



note:

If you are treating a patient for acne vulgaris may we suggest that you prescribe Capsebon to clear up associated seborrhea oleosa capitis.⁴

references: 1. Kirby, W. L.: Preliminary and short report. Cadmium sulfide suspension in seborrhoea capitis. *J. Invest. Dermat.* 29:159 (Sept.) 1957. 2. Stough, D. B.; Lewis, R. A.; Farmer, B. L.; Osment, L. S., and Noojin, R. O.: New beneficial agents in the treatment of acne vulgaris and seborrheic dermatitis. Postgraduate Medicine. In press. 3. Mullins, J. F., and Barnett, J. R.: Cadmium shampoo treatment of seborrheic dermatitis. *Texas J. Med.* 53:640 (Aug.) 1957. 4. Reports in the Pitman-Moore Research Files, to be published.



PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC.
INDIANAPOLIS 6, INDIANA

"People have learned the value of accumulating dollars that can lead to individual financial security." "This is the seventh year that Christmas Club disbursements have exceeded a billion dollars."

The 1958 pay off was about 3 per cent larger than in 1957. The average check this year amounted to \$105.

Of the 7,900 financial institutions, 189 had clubs in excess of \$1,000,000 each. As in the past, New York led with 2,

641,840 members and \$281,861,000, followed by Pennsylvania with 1,676,301 members and \$184,176,000, and then New Jersey with 1,133,704 members with \$144,836,020.

The rapid growth of the Christmas Club on the Pacific Coast has put California in fourth place with 968,584 members and \$131,029,000.

The forecast of how the \$1,365,000,000 will be used is shown in the table on page 110a.

WHATEVER IT IS, DON'T DO IT

All is not well with executives, we have just learned, and it's high time doctors gave them the attention which industrial medicine is already giving to "the worker on the floor."

That's English, in case you didn't

know it, and the above bit of wisdom is gleaned from a booklet "Health Problems for Directors," issued by a London organization known as the "English Institute of Directors." Further inquiry, by this 'worker on many floors' elicits

Satisfied with the usual cough remedies?



- do you find that the local soothing effect of cough syrups is not enough?
- are you concerned about the side effects of codeine?
- do you find that many remedies decrease cough productivity?
- do you have patients who do not cooperate fully because of cumbersome forms of issue and too frequent dosage?

C I B A
SUMMIT, N. J.

AVERAGE ADULT DOSAGE: 100 mg. t.i.d. In refractory cough, up to 6 perles (600 mg.) a day may be given.
AVERAGE DOSAGE FOR CHILDREN UNDER 10: One Pediatric Perle (50 mg.) t.i.d.

1. Shane, S. J., Krzysti, T. K., and Capp, S. E.: *Canad. M.A.J.* **77**:600 (Sept. 16) 1967.

the information that the organization is quite top hole, you know, and all that sort of thing, so, what say, we'd better have a look at it, old chap, if you know what I mean.

Hold back those tears, for advice, sound and true, is at hand. We learn that the executive (and the title could just as well have been doctor) who is too busy to take his annual vacation, should be pushed out of the office. It doesn't say who is going to do the pushing.

If you are over 55 years of age, the vacation should be six weeks. If you refuse to follow instructions, then the duration should be doubled as a penalty, to twelve weeks. Presumably there is someone, possibly J. Edgar Hoover, a member of the Supreme Court, or just an ordinary Joe with an axe over your

head, who can order you around.

On this vacation you may wish to play a little golf or bridge. As such, these sports meet with the approval of the English Institute of Directors. But wait, there is a catch. These pleasant pastimes, it tells us, are "frequently mere excuses for smoking, drinking and late night. . . ." Tut, tut.

"Try not to sign any paper or memo for three months," we are further advised, "unless its relevance is obvious." That could be used as an out, in case you want to cheat a little.

Doctors, and even executives themselves, are becoming aware of what is going on, we are advised by London. That thing—the one that is going on—is that "the executive may, in fact, be becoming strained beyond his limit; it is really surprising that this class of

If not...here's why you should try new Tessalon Perles



- controls cough by dual action—in the chest as well as at cough centers of the brain.
- 2½ times as effective as codeine¹ without the side effects of codeine.
- controls cough frequency without decreasing productivity or expectoration.
- Perles offer convenient, precise dosage and relief for 3 to 8 hours.

SUPPLIED:
TESSALON Perles, 100 mg. (yellow).
Pediatric Perles, 50 mg. (red).
Available Oct. 1, 1958.

Tessalon[®]

(benzonatate CIBA)

'worker' has taken so long to have his trade registered as dangerous, thus avoiding the welfare rescue squads so characteristic of our life and times."

There is a lot of "stress" going on in the upper echelon, we learn. There are reasons for this. One of them is, "the range and complexity of the responsibilities that face executives today. Their self-esteem may be seriously wounded, and their efficiency impaired, by their having to cope with technical details which they do not properly understand, and which were not faced by directors fifty years ago."

There are other reasons, including air travel and dictating machines. That is because both have the foul traits of the speed-up. Then there is the "alcohol luncheon" which, it appears, has developed a following in Merry Old England. "It should be followed by a half-hour nap," the booklet advises. Now you're talking!

Finally, the report says, rising executives may run into stress "through being befogged by the rule that increasingly prevails that, once they reach the top they may find themselves too much alone."

"The middle of the pyramid is frus-

Guide For Investors

Based on recommendations of the Securities and Exchange Commission in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.

1. Think before buying, guard against all high pressure sales.
2. Beware of promises of quick spectacular price rises.
3. Be sure you understand the risk of loss as well as prospect of gain.
4. Get the facts—do not buy on tips or rumors.
5. Give at least as much thought when purchasing securities as you would when acquiring any valuable property.
6. Be skeptical of securities offered on the telephone from any firm or salesman you do not know.
7. Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects.

trating, and the top is lonely," it sagely remarks.

Speaking for at least one of the "workers on the floor," as the Institute classifies us, we'll say its grand not to be lonely. Anyone for a spot of lunch?

MEDICAL ELECTRONICS

Spurred by the apparent business opportunities and the prospect of making significant contributions to the well-being of mankind, a number of leading industrial organizations are actively engaged in the business of medical electronics. This new industry has grown to an estimated annual total of \$200,000,000.

National Securities & Research Corporation, sponsors of mutual funds with assets of \$335,000,000, stated recently

that the nation's doctors are fast becoming familiar with the scientific fields far beyond the traditional boundaries of the medical profession. Electronics, ultrasonics, atomic energy and other advanced sciences now comprise the sources of many new ideas, techniques and tools the physician puts to work.

It would be rare to find a civilian category that uses electronics for a greater variety of applications than the medical



Continuous control of gastric acidity
with frequent and regular small,
bland feedings, was advocated by
Bertram W. Sippy
(1866-1924) as essential in the
management of peptic ulcer.

Milpath®

[®]Miltown + anticholinergic
controls hypersecretion
and hypermotility,
provides relief of pain, spasm,
anxiety and tension without
belladonna or barbiturates.

Side effects are minimal.

**BERTRAM W.
SIPPY**

Formula: each scored tablet contains:
meprobamate 400 mg., tridihexethyl iodide 25 mg.

Dosage: 1 tablet t.i.d. with meals and 2 tablets at bedtime.

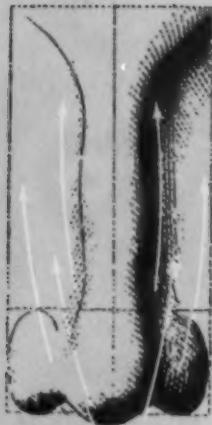
Indications: duodenal and gastric ulcer • colitis
spastic and irritable colon • gastric hypermotility • gastritis
esophageal spasm • intestinal colic • functional
diarrhea • G. I. symptoms of anxiety states.

Literature and samples on request.



WALLACE LABORATORIES

New Brunswick, N. J.



penetration gives relief

Penetration is the prerequisite for sound infranasal therapy. Thonzonium bromide, an exclusive mucolytic agent with unusual penetration-promoting properties, causes prompt dispersion of mucoid secretions and speeds medication to the site of irritation. Deep infiltration also allows the therapeutic agents of Biomydrin to remain active for prolonged periods. Biomydrin lets the patient breathe easily again.



Lasting relief of rhinitis or sinusitis is usually obtained in minutes with Biomydrin. Phenylephrine shrinks nasal mucosa; antibacterial neomycin and gramicidin fight infection; antihistaminic thonzylamine relieves itching and sneezing.

Supplied in 1/2 oz. plastic atomizer and 1/2 oz. bottle with dropper. Also available: Biomydrin F Nasal Spray, containing hydrocortisone alcohol 0.02%, for severe edema and inflammation. In 1/2 oz. plastic atomizer.

Biomydrin[®]

nasal spray / drops



profession, the corporation's publication, "Atomic Activities" believes. Cardiographs are made possible by electricity generated by the heart's action and this information now may be presented on oscilloscopes resembling large television tubes. Blood pressure is measured electronically during surgery by a hollow needle inserted directly into the artery which converts the pressure of the blood to an electrical value.

Brain waves may be measured and analyzed by an electronic instrument called an electroencephalograph, but even the trained specialist finds much of this information extraordinarily complex and difficult to interpret. The investment company adds, "It would be logical to turn to electronic data analyzers and computers for help, a step which has already been taken with significant degrees of success."

THE MONEY OUTLOOK

Money rates, or the charge for borrowing, constitute an important element in all business and financial transactions. They represent a cost of doing business and in the marketplace their fluctuations help cause an opposite trend in bonds, and to some extent in preferred stocks.

Dr. Marcus Nadler, money expert, and consulting economist of The Hanover Bank, New York, expressed the view a few weeks ago that we are headed for another round to tight money. He believes that a further rapid increase in business activity will encourage the Federal Reserve to pursue a policy of active credit restraint.

"Free excess reserves will be further

reduced and may even become negative," he said. The discount rate will be raised, followed by an increase in open market rates, including the prime rate."

Under such circumstances, long-term money rates may increase moderately, while short-term rates will continue to advance, Dr. Nadler stated.

If the recovery should slow down or temporarily falter, long-term money rates will decline and short-term rates will hold at current levels, he added.

Higher bond yields will dampen demand for mortgage money, and, unless the resources of F.N.M.A. are increased, home starts will fall off, Dr. Nadler predicted.

BOND FUND IN MERGER

Reorganization of Manhattan Bond Fund, Inc. through a merger with Diversified Investment Fund, Inc., a balanced fund under the sponsorship of Hugh W. Long Co., has been overwhelmingly approved by the holders. The plan involves the purchase of Manhattan's assets by Diversified.

Reasons for the move reflect the disappointment of many investors in fixed

dollar obligations in an economy where there is a gradual depreciation in the value of currency and consequently no offset against the ravages of inflation. Equities, such as shares of stock, are a partial, though imperfect, hedge.

In this instance the reasons were explained to shareholders in a letter from William Gage Brady, Jr., chairman of both funds, and Hugh W. Long,



stop diarrhea

...solves acute diarrhoeal disease problems...

- swiftly relieves symptoms
- rapidly destroys bacterial pathogens (bactericidal rather than bacteriostatic)
- succeeds where others fail against the enteric "problem pathogens" — increasingly prevalent, refractory strains of *Staphylococcus*, *Escherichia*, *Salmonella* and *Shigella*

Furoxone® Liquid

...without creating new problems

- does not upset the balance of normal intestinal flora
- does not encourage *fecal* or *staphylococcal* overgrowth
- does not induce significant bacterial resistance

A PLEASANT ORANGE-MINT FLAVORED SUSPENSION containing Furoxone, 10 mg. per 15 cc., with kaolin and pectin
■ For patients of all ages (may be mixed with infant formulas, passed through a standard nursing nipple) ■ Dosage: Should provide (to 4 divided doses) 600 mg. daily for adults, 6 mg./Kg. daily for children ■ Supplied: bottles of 340 cc. (also: Furoxone Tablets, 100 mg. scored, bottles of 20 and 100)

THE NITROFURANS—A unique class of antimicrobials
EATON LABORATORIES, NORWICH, NEW YORK



RECENT STUDIES BY INVESTMENT FIRMS

Wall Street firms are glad to supply those who are interested with views on various industries and companies. You can do us a favor if you mention *Medical Times* as the source of your information. A partial list of such literature that has come to hand recently, follows.

SUBJECT	FIRM	FIRM'S NEW YORK ADDRESS
Foremost Dairies, Inc.	Parrish & Co.	40 Wall St.
Pan American Sulphur Co.	Blair & Co.	20 Broad St.
Acme Industries	Blair & Co.	20 Broad St.
Department Stores	Eastman Dillon, Union Securities & Co.	15 Broad St.
Radio Corp. of Amer.	Halle & Stieglitz	52 Wall St.
Boeing Airplane	Halle & Stieglitz	52 Wall St.
Sperry Rand Corp.	Halle & Stieglitz	52 Wall St.
Ingersoll Rand Co.	Thomson & McKinnon	11 Wall St.
Paper stocks	Thomson & McKinnon	11 Wall St.
The Hecht Co.	Francis I. duPont & Co.	One Wall St.
Armstrong Rubber Co.	Francis I. duPont & Co.	One Wall St.
Rohr Aircraft Corp.	Theodore Tsolainos & Co.	One Wall St.
Amer. Tel. & Tel. Co.	Theodore Tsolainos & Co.	One Wall St.
E. J. Korvette, Inc.	Auchincloss, Parker & Redpath	52 Wall St.
The Cement Industry	E. F. Hutton & Co.	61 Broadway
American-Standard	Courts & Co.	25 Broad St.
Kayser-Roth Corp.	Hemphill, Noyes & Co.	15 Broad St.
The Chemical Industry	Merrill Lynch, Pierce, Fennier & Smith	20 Pine St.
Revlon, Inc.	Oppenheimer & Co.	25 Broad St.
Wilson & Co., Inc.	Oppenheimer & Co.	25 Broad St.
Flintkote Co.	Stanley Heller & Co.	30 Pine St.
Eastern Gas & Fuel	Sartorius & Co.	39 Broadway
Franklin Life Insurance	Shearson, Hammill & Co.	14 Wall St.
Corn Products Co.	R. W. Presprich & Co.	48 Wall St.
Hooker Chemical Corp.	Purcell & Co.	50 Broadway
International Mining	Ira Haupt & Co.	111 Broadway
Pillsbury Mills	Ira Haupt & Co.	111 Broadway
Crescent Petroleum Corp.	Winslow, Cohn & Stetson	26 Broadway
Purolator Products, Inc.	A. C. Allyn & Co.	44 Wall St.
Armstrong Rubber Co.	Clark, Dodge & Co.	61 Wall St.
Ferro Corp.	Dreyfus & Co.	50 Broadway
Smith-Corona	Dreyfus & Co.	50 Broadway
Oil stocks	J. R. Williston & Beane	115 Broadway
Philco	Arthur Wiesenberger & Co.	61 Broadway
Allied Chemical Corp.	Green, Ellis & Anderson	61 Broadway
Clark Equipment Co.	Fahnestock & Co.	65 Broadway
Knox Glass, Inc.	Hayden, Stone & Co.	25 Broad St.
Stone Container Corp.	Hayden, Stone & Co.	25 Broad St.
United Western Minerals Co.	Hayden, Stone & Co.	25 Broad St.
H. C. Bock Co., Inc.	Hardy & Co.	30 Broad St.
Pennsylvania Railroad	Filor, Bullard & Smyth	26 Broadway
Johns-Manville Corp.	Amott, Baker & Co.	150 Broadway
U. S. Leasing Corp.	Morris Cohen & Co.	19 Rector St.
Reynolds Metals Co.	L. F. Rothschild & Co.	120 Broadway
Continental Oil Co.	Emanuel, Deetjen & Co.	120 Broadway
Standard Brands, Inc.	Orvis Brothers & Co.	15 Broad St.
General Motors Corp.	Orvis Brothers & Co.	15 Broad St.
Cummins Engine Co.	Bache & Co.	36 Wall St.
Reading Tube Co.	Paine, Webber, Jackson & Curtis	25 Broad St.
Morgan Engineering Co.	H. Hentz & Co.	72 Wall St.
Amer. Machine & Foundry	H. Hentz & Co.	72 Wall St.
Amer. Machine & Foundry	Shearson, Hammill & Co.	14 Wall St.
Harris-Intertype Corp.	Herzfeld & Stern	30 Broad St.
Railroad securities	Viles & Hickey	26 Broadway



*specifically designed to meet
the metabolic demands of convalescents
and patients on long-term therapy*

new NOVO-BASIC

Squibb High Potency B-Complex with C for Maintenance

Each capsule-shaped tablet of NOVO-BASIC supplies:

Ascorbic Acid.....	150 mg.
Thiamine Mononitrate.....	5 mg.
Riboflavin.....	5 mg.
Niacinamide.....	50 mg.
Pyridoxine Hydrochloride.....	1 mg.
Calcium Pantothenate.....	10 mg.
Vitamin B ₁ Activity Concentrate.....	2 mcs.
Folic Acid.....	0.15 mg.

Dosage: One or more tablets of NOVO-BASIC daily as indicated.
Supply: Bottles of 80 and 160 capsule-shaped tablets.

NOVO-BASIC is designed to meet the *daily* metabolic demands of convalescents and those on long-term therapy for adequate supplies of B and C vitamins. These water-soluble vitamins are *continuously being excreted* and must *continuously be replaced*. NOVO-BASIC is also indicated in patients receiving prolonged diuretic therapy where vitamin loss can be excessive.

Prescribing NOVO-BASIC is an *effective* and *convenient* means of assuring that your patient gets these highly important vitamins daily — and in the quantities he needs. And with NOVO-BASIC your patient gets only *dietary* quantities of folic acid.



Squibb Quality — the Priceless Ingredient

"NOVO-BASIC" is a Squibb trademark.

In potentially-
serious
infections...

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PROKALMATE, REG. U. S. PAT. OFF. DIVULGATION
PHOTO BY TECROGRAPHIC

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DIVULGATION PHOTO BY TECROGRAPHIC

Upjohn

The Upjohn Company, Kalamazoo, Michigan

Upjohn

Make new
Panalba
(Panmycetin Phosphate and Amphotericin B)
your
broad-spectrum
antibiotic
of first resort

effective against more
than 30 common pathogens,
even including
resistant staphylococci.

Availability: Powder

1. Panalba Granules, 200 mg. of 10 mg. AM

amphotericin B and 200 mg. of

Panmycetin phosphate (interfering phospho-

carbomycin equivalent to amphotericin hydro-

chloride 200 mg. and amphotericin B 200 mg.

2. Panalba 100 mg. Granules. When

sufficient water is added to 40 g. of powder,

each suspension 15 mg. is obtained.

Panmycetin (phosphate), equivalent to 100 mg.

amphotericin B and amphotericin B 100 mg.

Panmycetin phosphate 100 mg.

Dosage:

Panalba Granules: Use 1 capsule 0.1 g.

Panalba 100 mg. Granules:

For the treatment of moderately severe infections in infants and children, the recommended dosage is 1 capsule 0.1 g. or 10 mg. of Panalba 100 mg. granules per day, to be divided in 2 to 4 equal doses. When the suspension is used, the dose is 15 mg. per day. Dosage for adults is 2 to 3 capsules 0.1 g. or 20 mg. per day, depending on the type and severity of the infection.

ALL QUIET ON THE COUGHING FRONT "COTHERA"

Brand of Dimethocaine hydrochloride

SYRUP

MEDICAL TIMES

NEW COUGH MODERATOR

SPECIFIC ANTITUSSIVE...

"COTHERA" moderates intensity and frequency of coughing through a selective action apparently on the medullary cough center . . . subdues but does not abolish the cough reflex. The natural reflex for removal of secretions is retained.

ACTS WITHIN MINUTES—LASTS FOR HOURS...

"COTHERA" provides a local anesthetic and soothing demulcent action to induce almost immediate relief of 'sandpaper' throat and 'annoying tickle' . . . followed by sustained moderation of the cough reflex, lasting for four to six hours and frequently throughout an entire night with one dose.

NON-NARCOTIC...

"COTHERA" is nonaddictive; does not cause respiratory depression, gastric irritation, or constipation. It is well tolerated by children and elderly patients, even after continued use. (Antitussive action is equal to $\frac{1}{4}$ gr. codeine per teaspoon dose.)

GUARDS AGAINST BRONCHOSPASM...

"COTHERA" exerts a mild musculotropic spasmolytic action tending to protect against possible harmful effects and cough-aggravation of bronchospasm.

CHERRY-FLAVORED...

"COTHERA" is completely acceptable to all age groups.

Indications: "COTHERA" Syrup is specifically indicated for irritating, useless, or chronic coughs such as those associated with the common cold, children's diseases, excessive smoking. It may be used safely for short-term or prolonged treatment.

Dosage: Adults and children over 8 years—1 to 2 teaspoonfuls (25-50 mg.) three or four times daily. Children, 2 to 8 years— $\frac{1}{2}$ to 1 teaspoonful three or four times daily.

Supplied: 25 mg. per 5 cc. (teaspoonful), bottles of 16 fluidounces and 1 gallon.

Ayerst Laboratories

Ayerst

New York 16, N. Y. • Montreal, Canada

president. The two noted: the loss of the purchasing power of bond income as a result of inflation; and the fact that dividends from a bond fund do not qualify for the usual dividend exclusions or dividends received credit under the

federal tax laws. Reflecting these factors there had been a declining trend in the number of Manhattan Bond Fund's shareholders and its total assets, which threatened economical administration of the fund in the future.

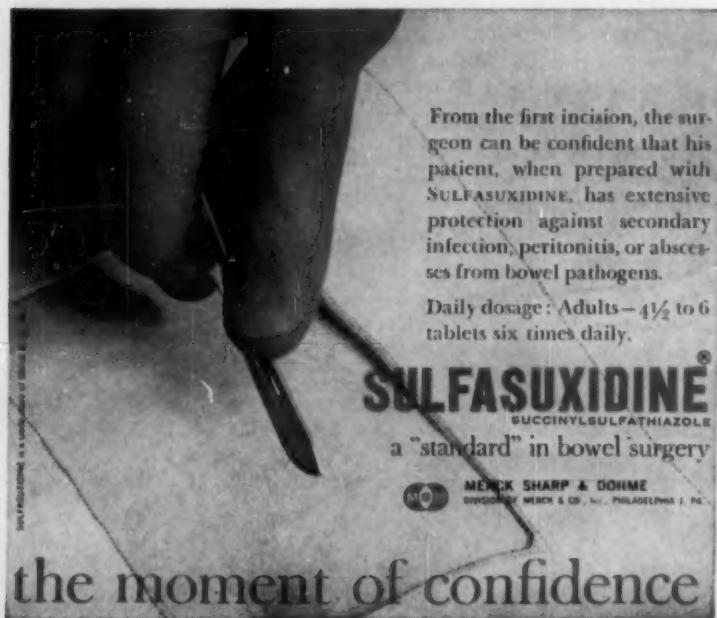
MAKE YOUR RESERVATION EARLY

In case you are contemplating taking an early trip to the moon you will want suitable accommodations. The Wonder Building Corporation, Chicago, manufacturer of pre-fabricated buildings, has designed a model of a structure which it believes can be used to house men and equipment.

You will be glad to know this cigar-shaped creation has a curved metal roof to protect those inside from meteoric particles. It will be 520 feet long, 160

feet wide and 65 feet high, and made of prefabricated sections. The size can be altered to meet transportation needs that may arise in space travel.

Obviously it includes plans for heating and for air conditioning, as scientists tell us the moon's temperature ranges from 214 degrees high to 243 degrees below zero. Also, it is pressurized, as the moon's surface is pressureless, and there will be adequate water and sewerage facilities.



From the first incision, the surgeon can be confident that his patient, when prepared with **SULFASUXIDINE**, has extensive protection against secondary infection, peritonitis, or abscesses from bowel pathogens.

Daily dosage: Adults—4 1/2 to 6 tablets six times daily.

SULFASUXIDINE
SUCCINYL SULFATHIAZOLE

a "standard" in bowel surgery

MENCK SHARP & DODME
DIVISION OF MENCK & CO., INC., PHILADELPHIA, PA.

the moment of confidence



House call: agitation

The acutely excited patient can be quickly calmed when SPARINE is on hand in the physician's bag. In both medical and mental emergencies, SPARINE quiets hyperactivity, encourages cooperation, and simplifies difficult management.

SPARINE gives prompt control by parenteral injection and effective maintenance by the intramuscular or oral route. It is well tolerated.

Comprehensive literature supplied on request

Sparine® HYDROCHLORIDE

Promazine Hydrochloride, Wyeth

INJECTION TABLETS SYRUP



Philadelphia 1, Pa.

STATISTICALLY SPEAKING

Statistics are supposed to be absolutely correct, and therefore a tool that can be used to end any argument. Theoretically at least, they represent the truth, the whole truth and nothing but the truth.

Never are they more questioned, however, than in a political campaign. For instance, much depends upon the base period one politician or another uses, against which he will then point with pride or view with alarm the developments of later years.

Herbert A. Leggett, of the Valley National Bank, Phoenix, Arizona, in his publication, "Arizona Progress," commented recently that political statistics are as suspect as a soviet olive branch. On hearing his first political speech, one of Arizona's less talkative natives

was heard to mutter, "Big wind, heap dust, no rain."

Editor Leggett added that he was impressed by a news story in one of his city's local papers. Obviously written by a reporter with a passion for stark unadorned statistics, it started off this way:

"A guilty verdict ended the 15-day trial of the 37-year-old Texas pipefitter who has been married six times. His 34-year-old bride of three months drowned in San Carlos Lake on Nov. 8 after plunging 250 feet in a 1953 Sedan from a lookout point on Highway 70."

There you have it. The complete story. No adjectives, no persiflage, no redundancy. Unpoetic and unemotional, yes, but all anyone needed to know about said incident.

Questions and Answers

In answer to inquiries, comments on a number of specific stocks are made below on the basis of information obtained from corporations and investment firms.

FOREMOST DAIRIES Its profit margin has been somewhat below that of National Dairy. Those close to the company believe there is a good chance of improving this situation. Usually Foremost sells at a lower price/earnings ratio

than either National or Borden. Its financial position is sound and its recent growth pattern has been better than that of its big competitors.

INTERNATIONAL TELEPHONE & TELEGRAPH It is making rapid strides in military electronics as well as in several other divisions. Its outlook is favorable.

READING TUBE This is one of the smaller

conceals better

peels better

heals better

DESTITIN[®] ACNE cream

- conceals acne lesions with a skin harmony not achieved before — no medicated or mask-like look.
- anti-seborrheic, gently keratolytic, reduces excess oiliness without irritation. Combats secondary infection.
- markedly reduces comedones and pustules, helps speed healing as shown by recent studies.¹⁻²

Combines colloidal sulfur, resorcinol, zinc oxide and hexachlorophene in a flesh-tinted, quick-drying, cosmetically elegant and superior base. Pleasant to use, greaseless.

Please write for SAMPLES and reprints
DESTITIN CHEMICAL COMPANY
812 Branch Avenue, Providence 4, R. I.

1. Bleiberg, J.: J. Med. Soc. New Jersey, Aug. 1957.

2. Weisberg, G.: Clinical Medicine, Feb. 1958.

DESTITIN SOAP



...ideal for cleansing teen agers' skin.

copper fabricators, located in Reading, Pa. It has recently completed a copper refinery near its plant. In the third quarter it managed to make a profit, contrasting with the steady losses that characterized this industry last year and the first part of 1958.

DRESSER INDUSTRIES It has a strong growth trend, with sales up more than 175 per cent and profit up more than 200 percent over the last eight years. It is a leader in the field of the manufacture of equipment and supplies for the oil, gas and chemical industries. Its outlook is for further growth.

STANDARD BRANDS, INC. The steady demand for special processed foods should help this company maintain an upward trend in sales and earnings. It is a good investment-type stock and its yield is high in comparison with many of its

quality. Last year's volume of more than \$500,000,000 should be bettered this year, thanks to its new products and the favorable corn product outlook.

CONTINENTAL OIL An integrated oil company that has been successfully diversifying its crude production in the United States and has established a successful Canadian oil company. Its new liquid methane business will start soon and should prove profitable.

H. C. BOHACK & CO. Store stocks, as a group, have been doing better and there is reason to believe this one will participate in the improvement. Its management is aggressive and it showed a substantial sales gain for the last fiscal year although per share earnings were down, largely because of increased depreciation. The company has been closing or remodeling outmoded stores

whenever he starts to



he's ready for

Delectavites

New vitamin-mineral supplement
in delicious chocolate-like nuggets

Each nugget contains:

Vitamin A.	5,000 Units*
Vitamin D.	1,000 Units*
Vitamin C.	.75 mg.
Vitamin E.	2 Units†
Vitamin B-1.	.25 mg.
Vitamin B-2.	.1 mg.
Vitamin B-6.	.1 mg.
Vitamin B-12 Activity.	.3 mcg.
Pantothenic.	.5 mg.
Pyridoxine.	.20 mg.
Ascorbic Acid.	.50 mg.
Biotin.	.05 mg.
Choline.	.12 mg.
Calcium Carbonate.	.125 mg.

Iron. .01 mg.
Cobalt. .01 mg.
Fluorine. .01 mg.
Iodine. .02 mg.
Magnesium. .02 mg.
Manganese. .01 mg.
Molybdenum. .01 mg.
Potassium. .05 mg.
"o. o. units. Two .001 g.

Break One Nugget per day
Supplement Boxes of 20-400
monthly supply
Boxes of 80-1,000
monthly supply or
family package.



WHITE LABORATORIES, INC., KENILWORTH, N. J.

MALES

**This patient's blood-pressure controlled
for the first time without side effects**

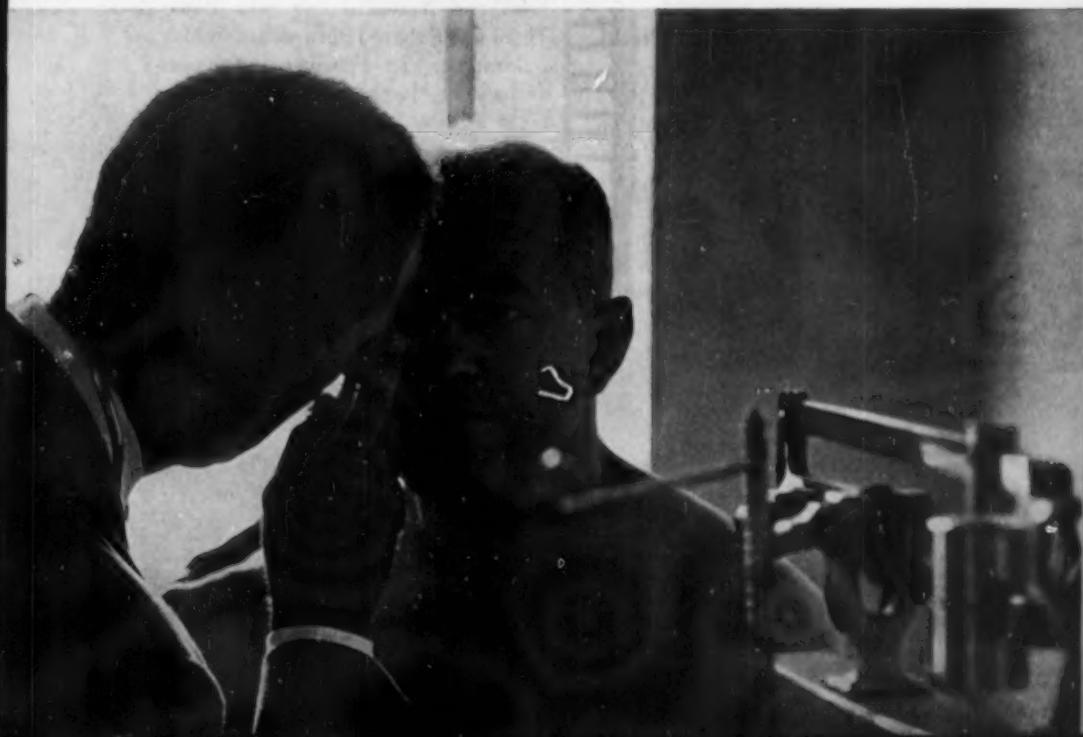
Remember this particular patient. He typifies the thousands of patients involved in a clinical investigation which promises to bring about a major change in rauwolfia therapy. The patient is being treated in a Massachusetts hospital. His blood pressure without treatment ranged up to 220/138; now *for the first time*, it is being maintained near normal *without side effects*. This dramatic case history is part of the story of a remarkable new antihypertensive agent

Singoserp

T.M.
(syrosingopine CIBA)

coming as soon as sufficient supplies are available . . .
from CIBA, *world leader in hypertension research*.

© 1968 CIBA



and replacing them with modern self-service supermarkets, which eventually should show favorable results in the earnings statement.

STONE CONTAINER This corporation operates four container plants, two carton plants and three paperboard mills to produce corrugated containers, paperboard, boxes, cartons and special packages. Sales and profits in the first half of this year were off from a year ago but there has been improvement in the second half. It is a fair speculation and the dividend appears safe. Another 4 per cent stock dividend, similar to that of a year earlier, is probable.

KNOX GLASS, INC. It has increased its capacity and is operating efficiently, indicating that in 1959 it should reach new highs in sales and earnings. It has a relatively new management and this has helped widen the profit margin. The stock appears to be conservatively priced, even in this competitive field, and it is a fair risk for those seeking capital gains.

WHIRLPOOL CORP. Any pickup in appliance purchasing should benefit Whirlpool. Over the last few years it has completed a number of mergers, and these have not brought the profit gains that were expected. Its contract with Sears Roebuck accounts for 59 per cent of Whirlpool's sales, which is a source of strength, but also leaves it subject to any change Sears might make. There is no indication there will be such a change and in the meantime Whirlpool has been improving its own dealer distribution.

SMITH-CORONA-MARCHANT For the fiscal year ended last June 30 its earnings

dropped to \$1.38 from the previous year's \$2.16. Changes have been made in the management and the organization is showing new life. It recently cut prices on the company's electric portable typewriter and benefits should become more apparent from the merger with Marchant. It is speculative, but appears to be a fair risk.

ROHR AIRCRAFT Earnings for its most recent fiscal year should be read in the light of development costs connected with new products. These expenses should not be great now and it should soon cash in on its deliveries. Rohr deals with a number of airplane companies and so is not as vulnerable as some others in its field to sudden cancellations by one customer. The stock is selling at a conservative price/earnings ratio.

S. H. KRESS & Co.—The company lost ground, competitively speaking, last year, and it started this year slowly. There was a sharp improvement in May, following top level changes in the management in March, and the outlook has taken a rosier hue. It is a justified risk, offering a chance for substantial profits.

HERTZ CORPORATION—It has a strong position in the growing auto rental field. Earnings are understood to have been improving and one estimate for this year is net of \$2.88 a share. No sensational developments are expected so this figure should be related to the current market price of the shares.

AMERICAN HARDWARE — There is a chance of a small increase in its dividend. Last year it earned \$2.73 a share and this year's figure should be that.

RIASOL

Safe and Effective

FOR PSORIASIS

RIASOL* continues to be the preferred treatment for psoriasis because it is both safe and effective.

The low mercury content of RIASOL provides a treatment which has had no reported adverse reactions.

RIASOL acts as an effective skin alterative. Itching and scratching are relieved immediately, the abundant scales and flakes begin to disappear in a few days, next the erythematous patches fade away, and finally the skin resumes its normal appearance and texture.

Recurrences are exceptional with continued treatment.

RIASOL contains a saponaceous combination of mercury 0.45%, phenol 0.5% and cresol 0.75%. Apply a thin film with gentle rubbing, every night after cleansing and drying the skin. No bandages needed.

At pharmacies or direct, in 4 and 8 fld. oz. bottles.

* T.M. Reg. U. S. Pat. Off.



BEFORE USE OF RIASOL



AFTER USE OF RIASOL

For That Case of Psoriasis



Try RIASOL and judge results for yourself. For professional literature and a generous clinical trial package, write to

SHIELD LABORATORIES

Dept. MT-1258

12850 Mansfield Avenue, Detroit 27, Michigan

RIASOL FOR PSORIASIS



PRESCRIPTION FOR TRAVEL

The Beautiful Bahamas

The Bahamas boast of warm winter sun, beautiful beaches and a foreign atmosphere. They're close to the U.S. mainland and offer a bonus to the shopper.

"Mon, pick up yourself," for instance, easily translates into the more recognizable but less colorful, "Man, get up."

"Mon," by the way, is strictly neuter, used to address persons or even objects.

Shopping Bahamian currency is based on the British sterling system, but American and Canadian money are readily accepted. Venturesome vacationers often exchange some of their own cash for the Bahamian currency, and dabble in shillings and pounds instead of dollars and cents.

Best rule of thumb for counting purposes—a shilling is worth 14 American cents or 13 Canadian cents. The Bahamian pound equals \$2.80 in American money or \$2.75 in Canadian currency.

Duty free, customs quotas are liberal for visitors who want to spend most of their vacation allowance on the bargains here on such imported items as French perfumes, English bone china, foreign cameras and internationally known liquors.

Foreign flavor without fuss over language, currency or customs regulations—that's the vacation bonus for Bahamas visitors.

The appeal of these semi-tropical, British resort isles in the Atlantic Ocean annually draws thousands of travelers from North America. English is the native language of the Bahamas, although the phoneticist may shudder at local verbal twists. Most visitors take Bahamian accents and idioms in stride.

IT'S LOVE AT FIRST TASTE **PALADAC**

liquid vitamin supplement

Because children love the delicious orange flavor of PALADAC, there's very little chance they will forget vitamin time, even if Mother does.

Since PALADAC contains a balanced formula of nine important vitamins, what more reliable and pleasant way to help assure proper vitamin intake for growing youngsters? PALADAC is even-flowing, readily miscible with milk, fruit juice or other foods if desired, and requires no refrigeration.

supplied: 4-ounce and 16-ounce bottles.

**PARKE, DAVIS & COMPANY
DETROIT 32, MICHIGAN**



One New York homemaker vacationing in Nassau, resort capital of the Bahamas, discovered that a local shop carried her own Royal Worcester bone china pattern. She bought four 5-piece place settings at a total cost of \$35.80, for about a \$32 saving over the New York price.

Geography There are nearly 700 islands (most uninhabited) and about 2,400 keys and rocks, a total land surface of about 4,466 square miles, in the Bahamas. The islands stretch from a point in the Atlantic Ocean about 50 miles east of southern Florida, southeast toward Haiti. The Bahamas are not in the Caribbean or in the British West Indies. Much of the 90,000 square miles of sea covered by the British colony is shallow, except where deep canyons cut into the under-water plateau.

The islands, formed of oölitic limestone, are covered with over 950 varieties of plants, 30 species of orchids and indigenous palms. Bright hibiscus, bougainvillea, chalice flowers, casua-

rina trees and palms cover the isles year round because of the mild climate.

Travelers from Christopher Columbus on have extolled the Bahamas' climate. Visitors sun and swim during winter months. In the summer, sea breezes allay the sultriness common to so many southern resorts. Temperatures fluctuate in the low 70s during winter and move up to the 80 degree mark during summer. Average annual rainfall, 1943-56, was 48.12 inches.

Population The "Indians" Columbus encountered here in 1492 belonged to the Taino culture of the Arawak language group. They came to the Bahamas from South America via intervening islands, pushing back the more primitive Siboney tribe. Columbus reported the natives to be gentle, handsome and hospitable. Within a few decades these inhabitants were transported to Spain and Hispaniola and forced to work in the mines and sugar mills. In a short time they were extinct and the Bahamas depopulated.

Adventurers from England made the first organized attempt to colonize, in about 1648 or 1649. Religious and political dissenters migrated from America during the Revolutionary War period. African slaves were imported to till island sisal and cotton plantations. Today's inhabitants: descendants of former settlers and slaves; Americans, English and Canadians who have succumbed to permanent or part-time island living. Population, according to a count in 1955, was 87,702.

New Providence is the best known of the Bahamas because Nassau, capital of the islands, is situated here. Nassau's

TO OUR READERS: You are avid travelers—as statistics show—taking trips for pleasure and relaxation as well as to attend professional meetings in this country and abroad. In addition, you often prescribe travel for your patients. Thus, the purpose of this department is to give you concise, practical information about one of your strong interests — travel. As a special service, this section will carry each month a calendar of important forthcoming national and international medical meetings.

Assuredly

the

lady

is

fastidious



when
recommending
a
vaginal
douche

Massengill® powder



Massengill Powder has a "clean" antiseptic fragrance. It enjoys unusual patient acceptance.

Massengill Powder is buffered to *maintain* an acid condition in the vaginal mucosa. It is more effective than vinegar and simple acid douches.

Massengill Powder has a low surface tension which enables it to penetrate into and cleanse the folds of the vaginal mucosa.

Massengill Powder solutions are easy to prepare. They are non-staining, mildly astringent.

Indications: Massengill Powder solutions are a valuable adjunct in the management of monilia, trichomonas, staphylococcus, and streptococcus infections of the vaginal tract. Regular douching with Massengill Powder solution minimizes subjective discomfort and maintains a state of cleanliness and normal acidity without interfering with specific treatment.

Currently, mailings will be forwarded only at your request. Write for samples and literature.

THE S. E. **M**ASSENGILL COMPANY

BRISTOL, TENNESSEE • NEW YORK • SAN FRANCISCO • KANSAS CITY

*In
modern
feminine
hygiene
and therapy*

massengill powder

The clean, refreshing fragrance of Massengill Powder is acceptable to the most fastidious for therapeutic or routine hygienic use. Solutions are easily prepared, convenient to use, nonstaining. They effectively cleanse, deodorize and soothe the vaginal mucosa, while their mild astringent properties tend to decrease vaginal secretions.

CLEAN-UP AFTER ANTIBIOTICS

Following intensive antibiotic therapy, many female patients complain of vulvar pruritus or vaginitis, and profuse vaginal discharge. Most of these present the classical picture of *Monilia albicans*, *Trichomonas vaginalis* or mixed infections. When these infections occur, regular use of Massengill Powder, with its pH of 3.5 to 4.5, helps restore the normal acidity of the vaginal tract. At this normal pH the growth of pathogenic organisms is inhibited and the growth of the normal vaginal flora encouraged.¹

LOW pH RETENTION

Massengill Powder is buffered to retain an acid condition. In a recent study, ambulatory patients—with an alkaline vaginal mucosa resulting from pathogens—maintained an acid vaginal mucosa of pH 3.5 for a period of 4 to 6 hours after douching with Massengill Powder; recumbent patients maintained a satisfactory acid condition up to 24 hours. Simple acid douches are quickly neutralized by an alkaline vaginal mucosa, and are unsatisfactory in maintaining the required acid pH of the vagina.²

LOWER SURFACE TENSION

Massengill Powder in the standard solution has a surface tension of 50 dynes/cm. as compared to that of water and simple acid solutions with 72 dynes/cm. This added property enables Massengill Powder to penetrate into and cleanse the folds of the vaginal mucosa, thus increasing the therapeutic effectiveness. Lowered surface tension makes the cell wall and cytoplasmic membrane of the infecting organism more permeable and more susceptible to specific therapy.³

SUPPLY

Massengill Powder is supplied in glass jars of the following sizes:

Small, 3 oz.
Medium, 6 oz.
Large, 16 oz.
Hospital Size, 5 lbs.

Pads of douching instructions for patient use available on request.

REFERENCES

1. Lang, W.R., Rakoff, A.E., Am. Geriatrics Soc. 7:520 (1953).
2. Arnot, P.H., The Problem of Douching, Western Journal of Surg., Obs., and Gyn., Vol. 62, No. 2:85 (1964).

THE S. E. MASSENGILL COMPANY

BRISTOL, TENNESSEE • NEW YORK • SAN FRANCISCO • KANSAS CITY

fine harbor, protected on the north by Hog Island, explains its development as the principal port of the colony. The island is 21 miles long, east to west, and seven miles wide at its widest point.

Transportation Seven international airlines provide service to Nassau. An inter-island airline connects New Providence with the surrounding Bahama resort isles and also provides mainland-island service.

One cruise ship sails the 185 miles east to Nassau from Miami twice weekly and another makes the 1,014 mile southward voyage from New York every weekend. Other liners call at Nassau's wharf on a regularly scheduled basis.

Both Pan American World Airways and British Overseas Airways Corporation span the airlane between New York and Nassau in about four hours. PAA's Clippers make the run four times weekly (Sunday, Tuesday, Thursday and Saturday) at present, and will operate on a more extended basis during the December-April winter season.

BOAC's Viscounts continue making the southbound flight daily. According to current information, beginning November 1, DC7Cs were to replace the Viscount service.

PAA links Miami, Fla., with Nassau thrice daily on 55-minute flights. An additional daily flight will be offered through the December-April period.

Mackey Airlines transports vacationers from Miami to the western Bahamas playgrounds—Grand Bahama and Bimini—in about 35 flight minutes. The airline provides daily service to Grand Bahama from Miami, via Fort Lauderdale and West Palm Beach, Fla., as



NEW LIQUID, ASPIRIN-LIKE ANALGESIC & ANTIPYRETIC DROPSPRIN®

Prescribe DROPSPRIN wherever and whenever the patient will not or cannot swallow aspirin tablets. Especially convenient for infants, children and geriatric patients for whom tablet medication is difficult.

DROPSPRIN is a pleasantly flavored milky suspension containing 1 gr. salicylamide per each 1cc. DROPSPRIN is completely miscible with water, milk or fruit juices. DROPSPRIN may be used for "active q.s."ing" in place of inert syrups or elixirs in order to add degrees of analgesia.

Indications and dosage:
Same as for aspirin.

Supplied: Bottles—1 oz. and 2 oz. with dropper calibrated at 0.5cc. and 1.0cc.

Samples and literature
available upon request

MARTIN H. SMITH CO.
131 East 23rd St., New York 10, N. Y.

well as thrice weekly flights to Bimini from Miami and Fort Lauderdale.

Direct service from Miami or Nassau to the two westernmost isles is also available via Bahamas Airways, Ltd., local inter-island airline, five days a week. BAL's 4-engined Herons on the mainland-island run will be operated on a daily schedule by January 1.

Mackey Airlines' DC-4s link Florida gateways—Tampa, St. Petersburg, West Palm Beach and Fort Lauderdale—with the Bahamas' capital every day.

Trans-Canada Air Lines operates a 7½-hour flight between Toronto and Nassau via Tampa every Monday, and offers non-stop Toronto-Nassau flights each Wednesday. From December 1 to April 25, Trans-Canada steps up its service to six weekly flights, with a Sunday flight from Montreal via DC-4 North Star craft and Super Constellation flights from Toronto during the week.

At this writing, BOAC plans to inaug-

urate its DC7C service between Montreal and Nassau at the end of November on a once a week basis. Three weekly flights will be available during the winter season.

British West Indian Airways, a BOAC subsidiary, transports vacationers to Nassau daily from Montego Bay and Kingston, Jamaica, on Viscounts. A Sunday and Thursday service is available from Havana and Varadero Beach, Cuba, via Cubana Airlines' Viscounts.

Regularly scheduled service between Nassau and the surrounding Bahama isles is offered by BAL, in 14-passenger Herons or Goose amphibians.

By Ship For U. S. mainlanders who prefer cruising to Nassau, the *S.S. Florida* sails from Miami every Monday and Friday, making the Gulf Stream crossing overnight. The liner sails from Nassau to Miami every Wednesday and Sunday. Several other cruise ships will make the Miami-Nassau run regularly during the winter season.



Bahamas News Bureau

The surrey typifies the leisurely pace of the Bahamas. In Nassau they're used for general transportation as well as for sightseeing.

How clinicians evaluate the safety and effectiveness of RITALIN® as a psychic stimulant

CONDITIONS TREATED	RESULTS	COMMENTS ON SAFETY
Depression accompanying chronic illness and convalescence from short-term illness; mild depression induced by life pressures; overtranquillization.	"The drug gave a plateau type of stimulation, smooth onset, with no euphoria . . . The effect lasted about four hours, gave the patient a feeling of well-being . . ."	"The side effects of Ritalin are minimal." "The work showed that the drug had no effect on blood pressure, the blood count, urine or blood sugar, did not depress the appetite, and produced no tachycardia." ¹
Lethargy, fatigue and emotional depression secondary to chronic illness in elderly patients; mild depression secondary to short-term illness. (Twenty-three "normal," healthy people also received the drug.)	"For the entire 112 patients 66 per cent showed marked improvements [obvious drug effect and mood improvement] . . ."	"No serious side reactions were noted . . . In no case was it necessary to stop the drug. No evidence of significant effect upon blood pressure or pulse has been found. This is particularly interesting, since these side effects have been common with other mood elevating drugs . . ." ²
Drug-induced psychophysiological depression; physiologic after-effects of certain anesthetics; barbiturate intoxication; moribund states due to systemic infection. (All patients were epileptic, mentally retarded and/or brain damaged.)	"All except two [of 129] patients responded to the initial injection [of parenteral Ritalin] within 1½ to 15 minutes."	"In no instance was there any evidence of untoward effects." ". . . the very poor basic physical condition of our patients in this study, those associated with profound chronic brain damage, accentuates the safety of parenteral Ritalin . . ." ³

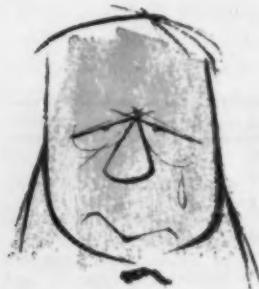
DOSAGE: *Oral:* Dosage will depend upon indication and individual response. Many patients respond to 10 mg. b.i.d. or t.i.d. Others will require 20-mg. doses. In a few cases, 5-mg. doses will be adequate. If inability to sleep is encountered, last dose should be given before 6 p.m. *Parenteral:* 10 to 30 mg., intravenously or intramuscularly. RITALIN® hydrochloride (methylphenidate hydrochloride CIBA)

References: 1. Natenson, A. L., Dis. Nerv. System 17:392 (Dec.) 1956. 2. Landman, M. E., Preisig, R., and Perlman, M., J. M. Soc. New Jersey 55:55 (Feb.) 1958. 3. Carter, C. M., and Maley, M. C., Dis. Nerv. System 19:146 (April) 1957.

2/202000

C I B A SUMMIT, N. J.

cold sufferers
never dry...



they just
blow away!



Until you provide
GREATER RELIEF
with longer-acting*

Novahistine LP

*A single dose provides relief for as long as 12 hours.

Novahistine LP[†] combines the action of a quick-acting sympathomimetic with an antihistaminic drug for a greater decongestive effect.

Each LP tablet contains:
Phenylephrine hydrochloride, 20 mg.
Chlorprophenoxyridamine
maleate 4 mg.
Bottles of 50 and 250 tablets.

Usual dose: Two tablets, morning and evening. For mild cases (and children), 1 tablet. Occasional patients may require a third daily dose, which can be safely given.

[†]Trademark

PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC.
INDIANAPOLIS 6, INDIANA

TRAVEL

New York-Nassau cruises are available every Friday night aboard the S.S. Nassau. The ship docks in Nassau Monday morning after the weekend voyage and leaves for New York on Tuesday evenings.

Cruise service is also available from Havana, Bermuda, Haiti.

MEDICAL TIMES

Calendar of Meetings

January

Miami Beach, Fla. International College of Surgeons, Southeastern Regional Meeting, January 4-7. *Contact:* Dr. Harold O. Hallstrand, 7210 Red Road, South Miami, Fla.

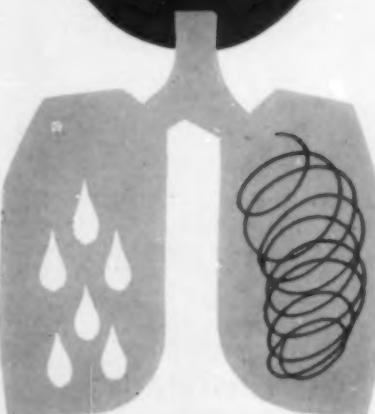
Carmel-by-the-Sea, Cal. Western Society for Clinical Research, January 29-31. *Contact:* Dr. William N. Valentine, University of California Medical Center, Los Angeles, 24.

February

Montreal, Can. Central Surgical Association, February 19-21. *Contact:* Dr. A. D. McLachlin, Victoria Hospital, London, Ontario.

Chicago, Ill. American Academy of Allergy, February 9-11. *Contact:* Dr. Bram Rose, Royal Victoria Hospital, Montreal, Quebec.

when the patient
needs relief
from tenacious
bronchial exudates



Novahistine® EXPECTORANT

combines the decongestive effects of Novahistine and the cough-control action of dihydrocodeineone with the liquefying, expectorant action of ammonium chloride.

Each 5 cc. teaspoonful contains:

Phenylephrine hydrochloride	10.0 mg.
Prophenylidamine maleate	12.5 mg.
Dihydrocodeineone bitartrate	1.06 mg.
Ammonium chloride	135.0 mg.
Sodium citrate	84.5 mg.
Chloroform (approx.)	13.5 mg.
I-Menthol	1.0 mg.
	(Alcohol 5%)

Dosage: Adults—2 teaspoonfuls, three or four times daily. Children— $\frac{1}{2}$ the adult dose. Infants— $\frac{1}{2}$ to $\frac{1}{4}$ teaspoonful, three or four times a day.

Supplied in pint and gallon bottles.

PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC.
INDIANAPOLIS 6, INDIANA

and...in colds
complicated by
useless, exhausting
coughs



Novahistine-DH*
(fortified Novahistine with dihydrocodeine)

When "head colds" become "chest colds" Novahistine-DH promptly controls coughs and keeps air passages of both head and chest clear of obstruction.

Each teaspoonful (5 cc.) of grape-flavored Novahistine-DH contains:

Phenylephrine hydrochloride.....	10 mg.
Prophenoxydamine maleate.....	12.5 mg.
Dihydrocodeinone bitartrate.....	1.86 mg.
Chloroform (approx.).....	13.5 mg.
I-Menthol.....	1.0 mg.

Supplied in pint and gallon bottles.

*Trademark



PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC.
INDIANAPOLIS 6, INDIANA

TRAVEL

March

Hot Springs, Va. American Broncho-Esophagological Association, March 8-9. *Contact:* Dr. F. Johnson Putney, 1712 Locust Street, Philadelphia 3, Pa.

San Francisco, Cal. American College of Allergists, March 15-20. *Contact:* Dr. M. Coleman Harris, 450 Sutter St., San Francisco.

April

San Francisco, Cal. American Academy of General Practice, April 6-9. *Contact:* Mr. Mac F. Cahal, Executive Secretary, Volker Blvd. at Brookside, Kansas City 12, Mo.

Miami, Fla. Congress of International Anesthesia Research Society, April 20-23. *Contact:* Dr. A. William Friend, East 107 and Park Lane, Cleveland 6, Ohio.

May

Dusseldorf, Germany. Conference on International Union for Health Education of the Public, May 2-9. *Contact:* Secretary-General, 92 rue St. Denis, Paris 1, France.

Atlantic City, N. J. Association of American Physicians, May 5-6. *Contact:* Dr. Paul B. Beeson, Yale University School of Medicine, New Haven 11, Conn.

June

Atlantic City, N. J. American Medical Association, Annual Meeting, June 8-12. *Contact:* Dr. F. J. L. Blasingame, 535 North Dearborn St., Chicago 10, Ill.

announcing

a new order of magnitude in corticosteroid therapy!

The great corticosteroid era opened ten years ago with the introduction of Cortone® (Cortisone). Today, MERCK SHARP & DOHME proudly presents the crowning achievement of the first corticosteroid decade—DECADRON (dexamethasone)—a new and unique compound, which brings a new order of magnitude to corticosteroid therapy.

Decadron*

DEXAMETHASONE

to treat more patients more effectively



MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
PHILADELPHIA 1, PENNSYLVANIA

a new order of magnitude

in anti-inflammatory potency

DECADRON "possesses greater anti-inflammatory potency per milligram than any steroid yet produced,"¹ and is "the most potent steroid thus far synthesized."² Milligram for milligram, it is, on the average, 5 times more potent than 6-methylprednisolone or triamcinolone; 7 times more potent than prednisone; 28 times more potent than hydrocortisone; and 35 times more potent than cortisone.

in dosage reduction

Thanks to this unprecedented potency, DECADRON is "highly effective in suppressing the manifestations of rheumatoid arthritis when administered in remarkably small daily milligram doses."³ In a number of cases, doses as low as 0.5-0.8 mg. proved sufficient for daily maintenance. The average maintenance dosage in rheumatoid arthritis is about 1.5 mg. daily.

in elimination and reduction of side effects

Virtual absence of diabetogenic activity, edema, sodium or water retention, hypertension, or psychic reactions has been noted with DECADRON.^{1,3,4} Other "classical" reactions were less frequent and less severe. DECADRON showed no increase in ulcerogenic potential, and digestive complaints were rare. Nor have there been any new or "peculiar" side effects, such as muscle wasting, leg cramps, weakness, depression, anorexia, weight loss, headache, dizziness, tachycardia, or erythema. Thus DECADRON introduces a new order of magnitude in safety, unprecedented in corticosteroid therapy.

in therapeutic effectiveness

With DECADRON, investigators note "a decided intensification of the anti-inflammatory activity"² and antirheumatic potency.⁴ Clinically, this was manifested by a higher degree of improvement in many patients previously treated with prednosteroids,³ and by achievement of satisfactory control in an impressive number of recalcitrant cases.^{3,4}

in therapeutic range

More patients can be treated more effectively with DECADRON. Its higher anti-inflammatory potency frequently brings relief to cases resistant to other steroids. Virtual freedom from diabetogenic effect in therapeutic dosage permits treatment of many diabetics without an increase in insulin requirements. Absence of hypertension and of sodium and fluid retention allows effective therapy of many patients with cardiovascular disorders. Reduction in the incidence and severity of many side effects extends the benefits of therapy to numerous patients who could not tolerate other steroids. And a healthy sense of well-being, reported by nearly all patients on DECADRON, assures greater patient cooperation.

References:

1. Boland, E. W.: California Med. 88:417 (June) 1958.
2. Bunim, J. J., et al.: Arthr. & Rheum. 2:313 (Aug.) 1958.
3. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., June 21, 1958, San Francisco, Calif.
4. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., June 21, 1958, San Francisco, Calif.

To treat more patients more effectively
in all allergic and inflammatory disorders
amenable to corticosteroid therapy

DOSAGE AND ADMINISTRATION

With proper adjustment of dosage, treatment may ordinarily be changed over to DECADRON from any other corticosteroid on the basis of the following milligram equivalence:

One 0.75 mg. tablet of Decadron* (dexamethasone) replaces:



one 4 mg.
tablet of



one 5 mg.
tablet of



one 20 mg.
tablet of



one 25 mg.
tablet of

methylprednisolone or
triamcinolone

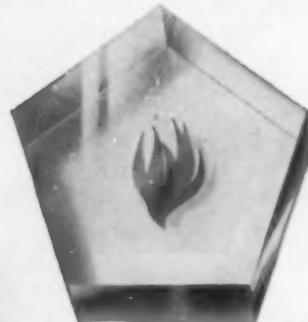
prednisolone or
prednisone

hydrocortisone

cortisone

SUPPLIED:

As 0.75 mg. scored pentagon-shaped tablets; also as 0.5 mg. tablets, to provide maximal individualized flexibility of dosage adjustment.



Decadron*

DEXAMETHASONE

Detailed literature on DECADRON is available to physicians on request.

*DECADRON is a trademark of Merck & Co., Inc.

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announcing

a new order of magnitude in corticosteroid therapy!

The great corticosteroid era opened ten years ago with the introduction of Cortene® (Cortisone). Today, MERCK SHARP & DOHME proudly presents the crowning achievement of the first corticosteroid decade—DECADRON (dexamethasone)—a new and unique compound, which brings a new order of magnitude to corticosteroid therapy.



Decadron*

DEXAMETHASONE

to treat more patients more effectively



MERCK SHARP & DOHME

MODERN THERAPEUTICS

Chlorpropamide in the Treatment of Diabetes Mellitus

Chlorpropamide, one of the newer oral hypoglycemic agents, was investigated from a standpoint of its antidiabetic properties. The effectiveness of the drug was determined by the percentage of blood sugar. If this was below 120 mg. percent, chlorpropamide dosage was reduced; if the blood sugar was between 120 and 175, the dosage was maintained, but if the percentage was above 175, the dose was increased gradually until the blood and urine glucose levels dropped to control levels. Chlorpropamide is available in uncoated tablets containing 0.5 Gm. Initially, patients were given 1.0 Gm. daily in two doses. If this proved ineffective, the daily amount was increased to 1.5 Gm. With good control manifested, the dosage was decreased. Several patients were satisfactorily managed with a daily dose of 0.25 Gm. Results of treatment up to 14 weeks showed 42 percent of patients satisfactorily controlled with chlorpropamide who had formerly been treated with insulin. Sixty-seven percent of patients who had been poorly controlled with another drug responded well to chlorpropamide. Side-effects were not severe, and disappeared when the dosage was reduced or discontinued. Hypoglycemic symptoms,

noted in five patients, did not progress to coma, and disappeared promptly with the ingestion of sweet drinks. Two of seven patients complaining of vascular weakness were forced to discontinue the drug. While the authors' study was insufficient for statistical evaluation, it is their belief that patients requiring daily insulin injections or those who fail to respond to other agents, may be controlled satisfactorily on chlorpropamide alone.

S. J. N. Sugar et al
Medical Annals of the District of Columbia,
27:445 (1958)

Prochlorperazine for the Treatment of Nausea and Vomiting in Children

Prochlorperazine, a phenothiazine derivative, has been used extensively for adult patients, but its administration to children as an antiemetic has received less attention, according to the author and his associates. The drug depresses the vomiting reflex in the medullary vomiting center and blocks emetic stimuli in the chemoreceptor trigger zone. Vomiting associated with a number of clinical conditions in adults has been successfully managed with prochlorperazine. During a six-month period, prochlorperazine was administered to 116 patients ranging in age from one week to thirteen years. In all cases the etiology of the vomiting was established, and it had been present from six hours to two weeks. Nonspecific gastroenteritis, upper respiratory infections, and otitis media accounted for 86.2 percent of the patients in the study. The drug was administered in ampules containing 5 mg. per milliliter of solution in oral liquid form containing 5 mg. per 5 ml. of syrup, or as 5-mg. tablets and sup-

—Continued on following page

CAN BE
GIVEN...
"WITHOUT
HESITATION
AS
IMMEDIATE
THERAPY
IN
BLEEDING
EPISODES..."*

- in epistaxis, otic and ocular hemorrhage, g.i. and rectal bleeding, other forms of spontaneous hemorrhage • before and after T & A, and other surgical procedures.

"PREMARIN" INTRAVENOUS

the physiologic hemostat

increases prothrombin concentration;
increases accelerator globulin; decreases
antithrombin activity.

FOR PROMPT, SAFE CONTROL

- remission usually obtained in 15 to 30 minutes with a single 20 mg. injection • "No investigator has reported any instance of toxicity or other undesirable side effects."*

"PREMARIN INTRAVENOUS (conjugated estrogens, equine) is supplied in packages containing one "Secule"® providing 20 mg., and one 5 cc. vial sterile diluent with 0.5% phenol U.S.P.

*Berg, J.P.: *Engst Ophth. & Otolaryng.* 20:33 (Jan.) 1957.



AYERST LABORATORIES
New York 16, N.Y. • Montreal, Canada

MODERN THERAPEUTICS

—Continued from preceding page

positories. Dosage conformed to the body weight of the patient, and was given at four-to-six-hour intervals until emesis was controlled. The duration of therapy varied from eight hours to five days. With this short-term administration, no toxic effects were noted: some of the patients became slightly drowsy or dizzy, but normal activity was not affected. The article continues that, of the group treated, 47 percent achieved excellent results; 43 percent obtained good results; in five patients the result was fair, and seven children failed to benefit significantly. Prochlorperazine appears to be a safe and effective antiemetic agent for use in children.

G. L. Daeschner et al.
Journal of Pediatrics,
53:148 (1958)

Chlorothiazide and Edematous States

In order to control edematous states effectively, the author, and his co-workers at the Kings County Hospital Center in Brooklyn, list the criteria required by the therapeutic agent, i.e., (1) a potent inhibitor of the renal reabsorption of sodium, (2) oral effectiveness, (3) ability to cause minimal excretion of bicarbonate and, reciprocally, considerable excretion of chloride, (4) short duration of action following a single dose, (5) recurrent effectiveness in repeated administration, (6) must not produce metabolic acidosis or other side-effects, and (7) need for high therapeutic index and low inherent toxicity. Chlorothiazide, designated a saluretic agent, appears to fulfill these require-

—Continued on page 154a

If you were to examine these patients



could you detect the uveitis patient on Medrol?

Probably not. Not without a history.

First, because he's more than likely symptom-free.

Second, because he shows none of the disturbing changes in appearance, behavior or metabolism sometimes associated with corticotherapy.

Even your practiced clinical eye would find it difficult to spot someone else's Medrol patient.

But in your own patients, you could see the advantages of Medrol right away. Why not try it?



**Medrol hits
the disease,
but spares the
patient**

Upjohn

The Upjohn Company, Kalamazoo, Michigan

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AGAINST
THE
UBIQUITOUS
HOSPITAL
STAPHYLOCOCCUS

CHLOROMYCETIN®

Staphylococci are notorious for the variety of infections they cause and for their ability to develop resistance to certain antibiotics.¹⁻³ According to recent *in vitro* studies, however, these stubborn pathogens remain sensitive to CHLOROMYCETIN.³⁻⁸

Highly effective against most strains of staphylococci, CHLOROMYCETIN has been reported of value in treatment for such serious infections as staphylococcal pericarditis,⁹ antibiotic-resistant postoperative wound infections,¹⁰ antibiotic-resistant breast abscesses,^{3,11} pneumonia due to antibiotic-resistant staphylococci,¹² postoperative staphylococcal enteritis,¹³ and septicemia.^{14,15}

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in several forms, including Kapsels® of 250 mg., bottles of 16 and 100.

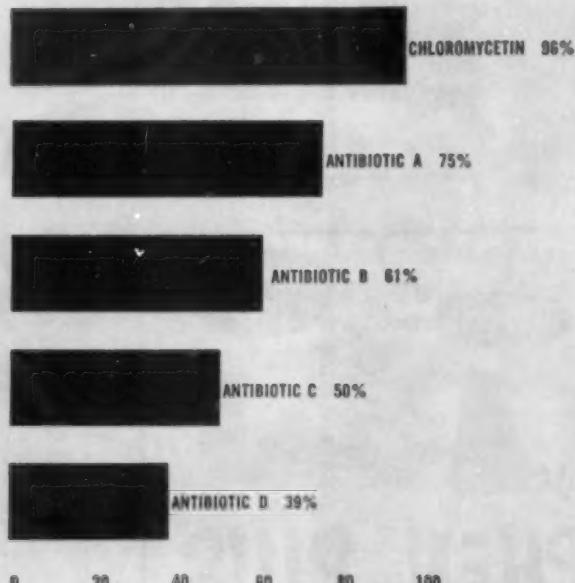
CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

REFERENCES: (1) Wise, R. L.: *J.A.M.A.* 166:1178, 1958. (2) Brown, J. W.: *J.A.M.A.* 166:1185, 1958. (3) Caswell, H. T., et al.: *Surg., Gynec. & Obst.* 106:1, 1958. (4) Godfrey, M. E., & Smith, I. M.: *J.A.M.A.* 165:1197, 1958. (5) Waibren, B. A.: *Wisconsin M. J.* 57:89, 1958. (6) Royer, A., in Welch, H., & Marti-Ibañez, F.: *Antibiotic Annual 1957-1958*, New York, Medical Encyclopedia, Inc., 1958, p. 783. (7) Markham, N. P., & Shott, H. C. W.: *New Zealand M. J.* 57:35, 1958. (8) Blair, J. E., & Carr, M.: *J.A.M.A.* 166:1192, 1958. (9) Horan, J. M.: *Pediatrics* 19:36, 1957. (10) Rawls, G. H.: *Am. Surgeon* 23:1030, 1957. (11) Sarson, E. L., & Bauman, S.: *Surg., Gynec. & Obst.* 105:234, 1957. (12) James, U.: *Brit. J. Clin. Pract.* 11:801, 1957. (13) Turnbull, R. B., Jr.: *J.A.M.A.* 164:756, 1957. (14) Ross, S.; Puig, J. R., & Zaremba, E. A., in Welch, H., & Marti-Ibañez, F.: *Antibiotic Annual 1957-1958*, New York, Medical Encyclopedia, Inc., 1958, p. 803. (15) Leachman, R., & Yow, E. M., in Conn, H. F.: *Current Therapy 1958*, W. B. Saunders Company, Philadelphia, 1958, p. 51.

PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN



**IN VITRO SENSITIVITY OF PATHOGENIC STAPHYLOCOCCI
TO CHLOROMYCETIN AND TO FOUR OTHER MAJOR ANTIBIOTICS***



*Adapted from Godfrey & Smith.⁴ Staphylococci studied were strains isolated from 28 patients in a general hospital.

MODERN THERAPEUTICS—

—Continued from page 150a

ments. Eighty-seven out-patients were included in the study, all of whom had failed to respond satisfactorily to other methods of treatment. Meralluride was injected on the first day of chlorothiazide therapy, and thereafter when it appeared warranted. Medications other than diuretics were continued. The average initial and maintenance dosage was 2 Gm. every 24 hours divided between a morning and night dose. As a result of therapy, a relatively stable state with regard to edema was noted within the first four-week period. The average loss of weight in the first week was just under five pounds. The average total loss was 12 pounds with a range from three to 72 pounds. Of the group, 71 patients became edema-free, or showed

a marked reduction in peripheral edema. Improvement in the general sense of well-being was extremely gratifying. Most of the patients remarked that they had not "felt this good in years."

S. I. Fishman, et al.

New York State Journal of Medicine
58:1679 (1958)

Infections of the Skin Treated with Framycetin Sulphate

Noting that the criteria for treating pyogenic skin infections is an antibiotic which is not used systemically, which causes little cutaneous reaction, and which has a low incidence of bacterial resistance, the author, a staff member of the Royal Victoria Hospital of Belfast, conducted a study of Framycetin sulphate. It had been pointed out previously that this drug is intended for topically.

—Continued on page 158a

NOSE COLD

HEAD COLD

WINTER COLD

PHENAPHEN® PLUS

Phenaphen Plus is the physician-requested combination of Phenaphen, plus an anti-histaminic and a nasal decongestant.

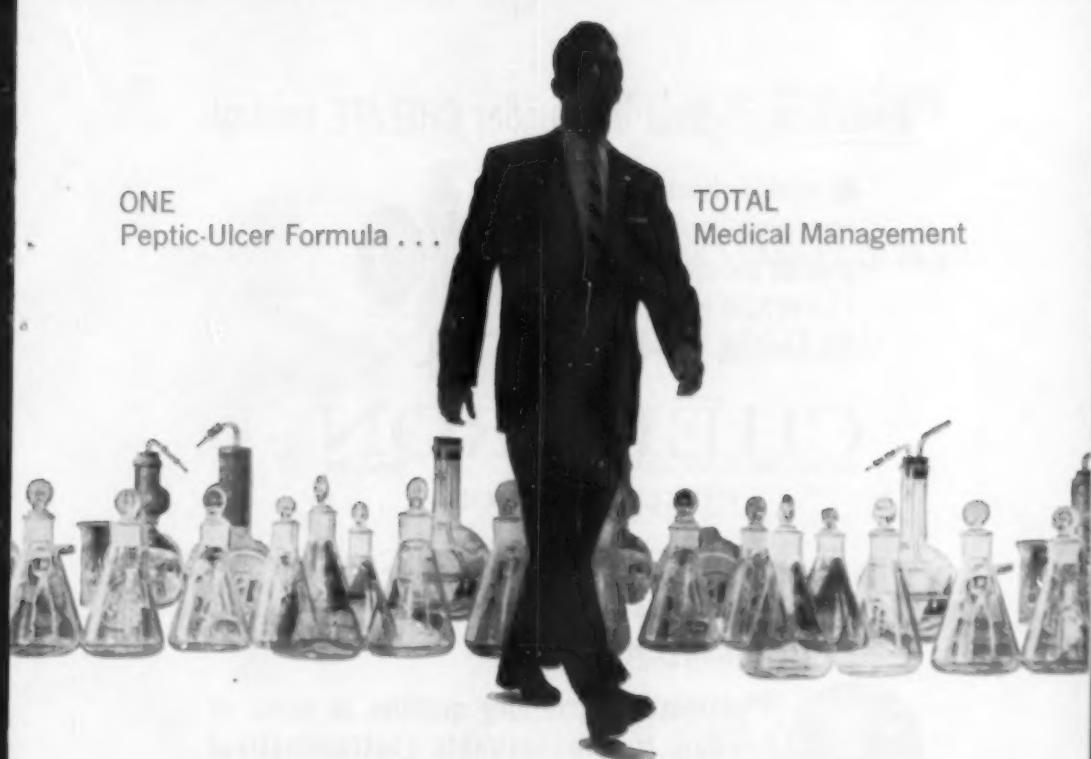


Available on prescription only.

each coated tablet contains: Phenaphen
Phenacetin (3 gr.) 104.0 mg.
Acetylsalicylic Acid (2½ gr.) 102.0 mg.
Phenobarbital (¼ gr.) 16.0 mg.
Hyoscyamine Sulfate 0.031 mg.
plus
Prophenpyridamine Maleate 12.5 mg.
Phenylephrine Hydrochloride 10.0 mg.

ONE
Peptic-Ulcer Formula . . .

TOTAL
Medical Management



Ever since the discovery of the therapeutic properties of aluminum hydroxide gel, Wyeth has been a pioneer in development of medicaments for peptic ulcer. Now, Wyeth research presents ALUDROX SA.

ALUDROX SA benefits the peptic-ulcer patient by providing complete medical management in one preparation. It relieves his pain, reduces his acid secretion, calms his emotional distress, promotes ulcer healing.

ALUDROX SA incorporates *ambutonium bromide*, an important new anticholinergic, to reduce gastric secretion and motility without significant side-effects or toxicity on therapeutic dosage.

For long- or short-term management—*anticholinergic, sedative, antacid, demulcent, anticonstipant . . .*



SUSPENSION

TABLETS

ALUDROX® SA*

Aluminum Hydroxide Gel with Magnesium Hydroxide,
Ambutonium Bromide, and Butabarbital, Wyeth

*Sedative and anticholinergic

SUPPLIED: SUSPENSION, bottles of 12 fl. oz. TABLETS, bottles of 100. Each teaspoonful (5 cc.) and tablet contains 2.5 mg. of ambutonium bromide and 8 mg. of butabarbital in combination with aluminum hydroxide and magnesium hydroxide approximately equivalent to 1 teaspoonful of aluminum hydroxide gel and $\frac{1}{4}$ teaspoonful of milk of magnesia. Also available: Tablets Ambutonium Bromide, 10 mg., bottles of 100.

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announcing...oral iron under CHELATE control

■ notably effective ■
exceptionally well tolerated ■ the safest
iron to have in
the home ■



CHEL-IRON
BRAND OF IRON CHOLINE CITRATE[†] TRADEMARK

CHELATED IRON

“its iron may be maintained in solution over a greater area of the gastrointestinal tract, thus permitting an optimal physiological uptake...”

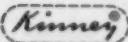


“possesses outstanding qualities in terms of freedom from undesirable gastrointestinal effects.”

“The chelation of iron minimized its toxicity and provided a high factor of safety against fatal poisoning.”

AVAILABLE AS: CHEL-IRON TABLETS BOTTLES OF 100 3 tablets supply 120 mg. elemental iron. CHEL-IRON PEDIATRIC DROPS 30-CC. BOTTLES with graduated dropper each cc. supplies 16 mg. elemental iron; 0.5 cc. provides full M.D.R. for infants and children up to six. CHEL-IRON PLUS TABLETS BOTTLES OF 100 3 tablets supply 72 mg. elemental iron plus B₁₂ with intrinsic factor, folic acid, pyridoxine, other essential B vitamins, and C.

*Franklin, M., et al.: Chelate Iron Therapy, J.A.M.A. 166:1685, Apr. 5, 1958.
†U. S. Pat. 2,575,611



KINNEY & COMPANY, INC. COLUMBUS, INDIANA



3-way relief of menopausal symptoms

- Dienestrol and Methyltestosterone—estrogen-androgen combined for more effective control of symptoms of hypo-estrogenemia
- Pentobarbital Sodium for relief of hyperirritability, anxiety and tension
- Dextro-Amphetamine Sulfate to elevate the mood and restore a normal, cheerful outlook

AMPERONE^{T.M.}

FOR A CALM CLIMACTERIUM

Each AMPERONE tablet contains:

Dienestrol	0.5 mg.
Methyltestosterone	2.5 mg.
Pentobarbital Sodium	30.0 mg.
Dextro-Amphetamine Sulfate	5.0 mg.

Dosage: 1 tablet daily

Supplied: Bottles of 60 tablets

Prescribe with Confidence

KREMERS-URBAN COMPANY
Milwaukee 1, Wisconsin

Ethical Pharmaceuticals since 1894

MODERN THERAPEUTICS

—Continued from page 154

cal application only. Framycetin sulphate was made up in 1.5 percent in a water-soluble ointment base. Patients were told to apply the ointment three or four times a day. In the group of 50 patients treated, the types of dermatitis were impetigo, infective dermatitis, secondarily infected eczema, infected papular urticaria, folliculitis, and sycosis barbae. Only two cases—one of impetigo and one of infective dermatitis—failed to respond. Sixty-nine percent of the cases of impetigo were cured within one week. The author believes these findings indicate that Framycetin sulphate is an effective cutaneous antibiotic which compares favorably with other antibiotic agents. In the bacterial examination, the organisms were tested

in vitro on blood-agar for sensitivity. A 0.1 percent solution was used for the *in vitro* testing, and a 1.5 percent concentration of antibiotic in water-soluble ointment is hardly ever likely to exceed 0.1 percent concentration in the tissues. In the cases responding to the Framycetin sulphate, *Staphylococcus aureus* haemolyticus and *Streptococcus haemolyticus* were isolated. No example of contact sensitivity or irritation was noted.

D. Burrows, M.D.
British Medical Journal,
2:428, 1958

Drug-induced Parkinsonism Treated with Kemadrin

Parkinsonism is one of the unpleasant side-effects attributable to the ataractic drugs, and it was for the purpose of

—Continued on page 164a

whenever he starts to

CHEW

he's ready for Delectavites®

New vitamin-mineral supplement
in delicious chocolate-like nuggets

Each nugget contains:

Vitamin A.....	8,000 (Units)	Boron.....	0.1 mg.
Vitamin D.....	1,000 Units	Cobalt.....	0.1 mg.
Vitamin C.....	75 mg.	Folates.....	0.1 mg.
Vitamin E.....	2 Units	Iodine.....	0.2 mg.
Vitamin B-1.....	2.5 mg.	Magnesium.....	0.6 mg.
Vitamin B-2.....	2.5 mg.	Manganese.....	1.0 mg.
Vitamin B-6.....	1 mg.	Molybdenum.....	1.0 mg.
Vitamin B-12 Activity	3 mcg.	Phosphorus.....	2.5 mg.
Paracetamol.....	5 mg.	Iron.....	10 mg.
Nicotinamide.....	30 mg.	Calcium.....	100 mg.
Folic Acid.....	0.1 mg.	Boron.....	0.1 mg.
Biotin.....	0.05 mg.	Chromium.....	0.05 mg.
Rutin.....	12 mg.	Iron.....	10 mg.
Calcium Carbonate.....	125 mg.	Chromium.....	0.05 mg.

Basic One Nugget per day

Supplied: Boxes of 30—one
box for individual use
one box of three
months' supply or
family package.

WHITE LABORATORIES, INC., KENILWORTH, N.J.



ANNOUNCING

a significant
medical advance
in peripheral vascular
disorders

CYCLOSPASMOL®

Cyclandelate (3,5,5-Trimethylcyclohexyl Mandelate), Ives-Cameron

U.S. Patent No. 2,707,193

- **Orally effective**
- **Clinically proved—widely studied**
- **Well tolerated—notably few side-effects**

CYCLOSPASMOL provides a reliable, effective *oral* treatment for peripheral vascular diseases—*vasospastic and occlusive*. By its direct action on vascular musculature, CYCLOSPASMOL causes vasodilatation. It, therefore, promotes optimal tissue response and healing.

"The criteria of success were not only the clinical course, but also objective symptoms, such as claudication time, healing of extensive gangrenous lesions, and skin temperature."¹

For control of intermittent claudication in:

- Arteriosclerosis obliterans
- Raynaud's disease
- Buerger's disease (thromboangiitis obliterans)

Also indicated in:

- Ulcerations—diabetic, trophic
- Cold feet, legs and hands

Supplied: Tablets, 100 mg., bottles of 100.

REFERENCES: 1. Van Wijt, T.W.: *Angiology* 4:103, 1953. 2. Gillhespy, R.O.: *Brit. M. J.* #1543, 1957. 3. Gillhespy, R.O.: *Angiology* 7:27, 1956. 4. Winsor, T.: *Angiology* 4:184, 1953. 5. Reeder, J.J.: *Genesek. gids* 31:370, 1953.



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COMPANY
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**Serpasil® offers
2 special
advantages for
hypertensive
patients,
report St. Paul
clinicians**

Physicians in St. Paul, Minnesota, find these actions of Serpasil desirable for many hypertensive patients:

1. Serpasil relieves the tachycardia that so often accompanies high blood pressure.

2. Serpasil has a rather pronounced central effect which is beneficial when hypertension is associated with frank anxiety or tension.

The experience of 450 physicians throughout the U.S. (interviewed during the course of a world-wide survey*) illustrates these advantages. Excellent or good overall response was reported

in 74 per cent of 871 patients who received Serpasil for hypertension *with anxiety-tension*; 80 per cent excellent or good response was reported in 261 patients who were treated with Serpasil for tachycardia.

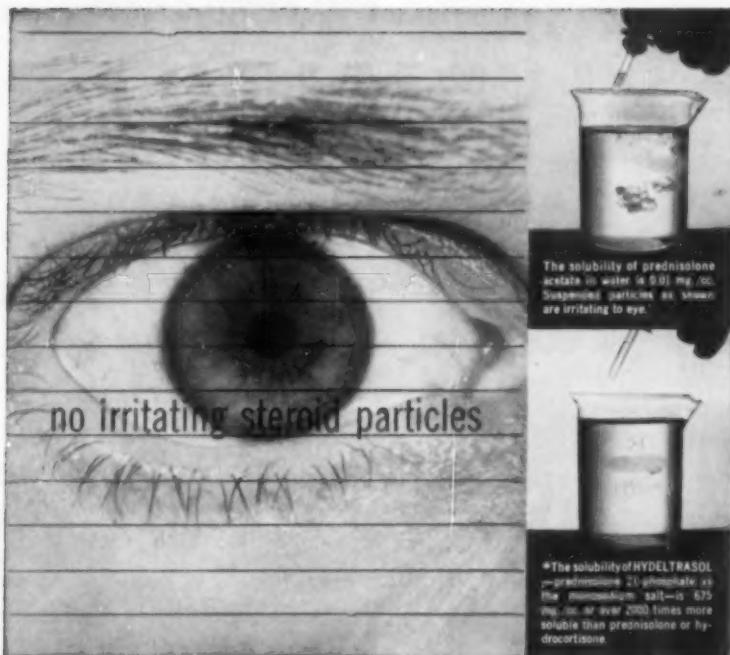
If your hypertensive patient exhibits marked anxiety-tension—or if his heart rate is up—why not give him the extra benefit of Serpasil therapy?

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SERPASIL® (reserpine CIBA)
SUMMIT, N. J.

*Complete information about the results of this survey will be sent on request.

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STERILE OPHTHALMIC SOLUTION

NEO-HYDELTRASOL

(prednisolone 21-phosphate with neomycin sulfate)

2000 times more soluble than prednisolone

or
hydrocortisone *

- free of any particulate matter capable of injuring ocular tissues.
- uniformly higher effective levels of prednisolone.

SUPPLIED: Sterile Ophthalmic Solution NEO-HYDELTRASOL 0.5% (with neomycin sulfate) and Sterile Ophthalmic Solution HYDELTRASOL 0.5%. In 5 cc. and 2.5 cc. dropper vials. Also available as Ophthalmic Ointment NEO-HYDELTRASOL 0.25% (with neomycin sulfate) and Ophthalmic Ointment HYDELTRASOL 0.25%. In 3.5 Gm. tubes.

HYDELTRASOL and NEO-HYDELTRASOL are trade-marks of Merck & Co., Inc.



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*Intravenous blood levels
with rectal administration*

CLYSMATHANE[®]

(Fleet)

Disposable Rectal Unit

An advanced method of theophylline therapy

For the alleviation of symptoms in bronchial asthma and the acute episodes of heart failure, Clysmathane (Fleet) supplies speedy and therapeutically adequate blood levels⁽¹⁾ of theophylline. Side effects, often associated with oral or parenteral administration, are minimized by the rapid rectal route provided by Clysmathane.

Dosage: One Clysmathane (Fleet) Unit as a retention enema before retiring or as directed.

Composition: Theophylline monoethanolamine (Theamin, Fleet), 0.625 Gm.; aqua, 37 ml. in single dose rectal dispenser. Prescription package of six individual units. Manufacturer's label readily removable.

(1) Ridolfo, A. S. & Kohlstaedt, K. G. "A simplified method for the rectal administration of theophylline," to be published.

Professional samples and literature on request, write:

C. B. FLEET CO., INC.

Lynchburg, Virginia



The new six-unit PRESCRIPTION PACKAGE of Clysmathane (Fleet) is more convenient to prescribe while assuring an adequate supply for patients. Disposable, single dose squeeze bottle is especially designed for self-administration... ready to use with prelubricated rectal tube. The manufacturer's labels are readily removable.



Now
in inflammatory anorectal disorders . . .

The Promise of Greater Relief

the first suppository to contain
hydrocortisone for effective control of proctitis

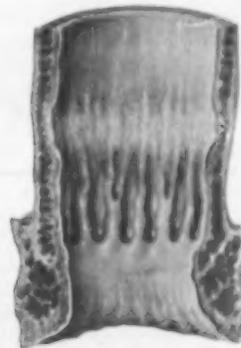
- Proctitis accompanying ulcerative colitis
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- Postoperative scar tissue with inflammatory reaction
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- Medication proctitis
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Ulcerative Colitis



Radiation Proctitis



Postoperative
Scar Tissue

Supplied: Suppositories, boxes of 12. Each suppository contains 10 mg. hydrocortisone acetate, 15 mg. extract belladonna (0.19 mg. equiv. total alkaloids), 3 mg. ephedrine sulfate, zinc oxide, boric acid, bismuth oxyiodide, bismuth subcarbonate, and balsam peru in an oleaginous base.

Wyanoids® HC

Rectal Suppositories with Hydrocortisone, Wyeth



Philadelphia 1, Pa.

MODERN THERAPEUTICS

—Continued from page 158a

counteracting this state that the author decided to test the effectiveness of Kemadrin. The drug was to be substituted for the antiparkinsonian drugs routinely used, or to be used initially for new cases. Patients in six services of the hospital were selected for the study, and the medical and nursing staffs were asked to record their observations. The patients were started on a dosage of 2.5 mg. three times a day, which was increased gradually. In summarizing the results submitted by the services, it appeared that Kemadrin is at least as effective as the other antiparkinsonian drugs, and, during the three-month course of treatment, no toxic manifestations were reported. In a number of instances, the author states that the action of the drug was superior to that of other agents. When Kemadrin was administered after the full-blown syndrome had developed, there was abatement of the symptoms within a few weeks. On

the other hand, when the drug was given at the early signs of parkinsonism no further signs developed, and the premonitory signs disappeared rapidly.

Leon Konchegul, M.D.

*Medical Annals of the
District of Columbia,*
27:405, 1958

Dietary Fat and Cholesterol Metabolism Fecal Elimination of Bile Acids and Other Lipids

It is confirmed that the ingestion of an unsaturated fat, sunflower-seed oil, lowers the serum-cholesterol level. This effect has been maintained for sixty days. Hydrogenated coconut fat, fed under similar conditions, produced a sustained rise of the serum-cholesterol level.

In men fed large amount of hydrogenated coconut fat the addition of an equal amount of sunflower-seed oil to the diet, with a corresponding increase in caloric intake, led to a substantial fall in the serum-cholesterol level.

When sunflower-seed oil was heated to a degree comparable with ordinary domestic cooking, there was no material change in its action on the serum-cholesterol level.

The introduction of sunflower-seed oil into the diet occasionally produced a transient excessive fecal excretion of fat. In all but one man, however, normal fat-absorption was maintained for long periods with dietary loads of up to 200 g. daily.

The fall in the serum-cholesterol level due to sunflower-seed oil was accompanied by a slight increase of neutral sterols and a considerable increase of bile acids in the feces. These changes can be interpreted as indicating that

—Continued on page 168a

MEDICAL TIMES



For full supplementation
of the essential nutritional factors in pregnancy—

FILIBON offers

- phosphorus-free formula
- new, well-tolerated source of iron, ferrous fumarate
- AUTRINIC® Intrinsic Factor Concentrate to augment the absorption of vitamin B₁₂
- prophylactic vitamins B₆ and K
- important trace elements

to keep her on the regimen you prescribe

- the FILIBON Jar, attractively designed for her
- the FILIBON Capsule, small, easy to swallow. Dry-filled for faster absorption, freedom from unpleasant after-taste
- the FILIBON Dosage, convenient, only one a day

Each soft-shell FILIBON capsule contains:

Vitamin A 4,000 U.S.P. Units	Folic Acid	1 mg.
Vitamin D 400 U.S.P. Units	Ferrous Fumarate	90 mg.
Thiamine Mononitrate (B ₁)	Iron (as Fumarate)	30 mg.
Pyridoxine (B ₆)	Fluorine (CaF ₂)	0.015 mg.
Niacinamide	Copper (CuO)	0.15 mg.
Riboflavin (B ₂)	Iodine (KI)	0.01 mg.
Vitamin B ₁₂ with AUTRINIC Intrinsic Factor Concentrate	Potassium (K ₂ SO ₄)	0.835 mg.
1/6 U.S.P. Oral Unit	Manganese (MnO ₂)	0.05 mg.
Ascorbic Acid (C)	Magnesium (MgO)	0.15 mg.
Vitamin K (Menadione)	Molybdenum (Na ₂ MoO ₄ 2H ₂ O)	0.025 mg.
	Zinc (ZnO)	0.085 mg.
	Calcium Carbonate	575 mg.

in the picture...during pregnancy

Filibon*

PHOSPHORUS-FREE PRENATAL VITAMIN-MINERAL SUPPLEMENT **LEDERLE**



DOSAGE / one or more capsules daily

SUPPLIED / attractive re-usable bottles of 100 capsules

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

*Reg. U. S. Pat. Off.



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CLINICAL BRIEFS FOR MODERN PRACTICE



if your patient wears tinted glasses and sighs frequently...?

She may have an anxiety state. The tinted glasses may be worn as a shield against the world—and to relieve the photophobia resulting from pupillary dilatation caused by anxiety-induced hyperadrenalinism. The sighs may be a result of fatigue from emotional unrest.

Source—Meyer, O. O.: Northwest Med. 53:1006, 1954.

*4 findings from a recent study**

calmative **nostyn**®

1. Anxiety and nervous tension appeared to be most benefited by NOSTYN.
2. Seventy per cent of patients obtained some degree of relief.
3. Greater inward security and serenity were experienced and expressed.
4. Mental depression did not develop in patients previously depressed by meprobamate or a similar drug.

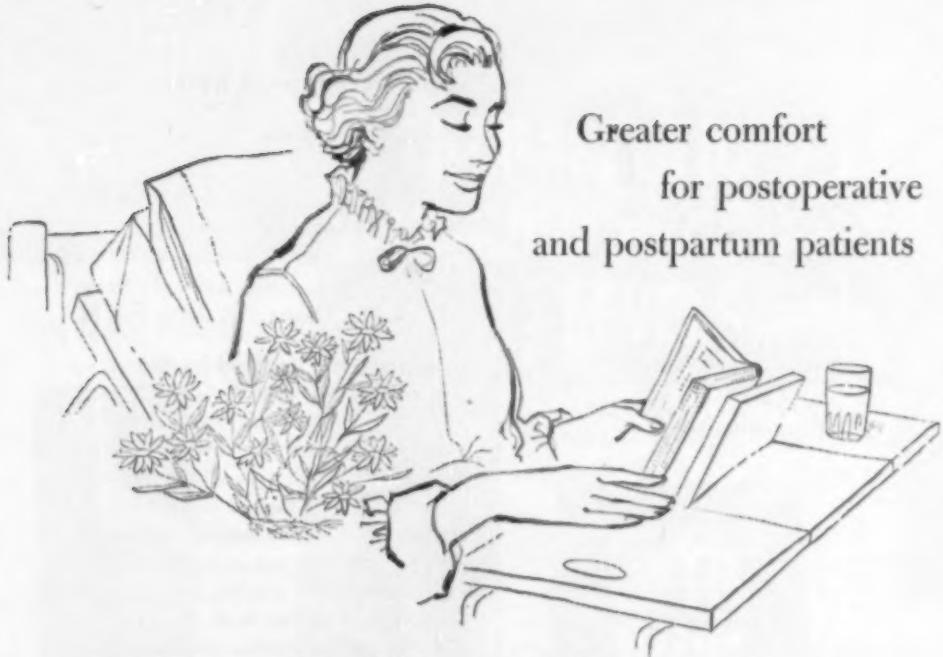
Ectylurea, AMES
(2-ethyl-cis-crotonylurea)

dosage: 150-300 mg. (1/2 or 1 tablet) three or four times daily. *supplied*: NOSTYN tablets, 300 mg., scored. Bottles of 48 and 500.

*Bauer, H. G.; Seegers, W.; Krawzoff, M., and McGavack, T. H.: New York J. Med. 58:520 (Feb. 15) 1958.



AMERICAN MFG. CO. INC., NEW YORK, N. Y.
AMERICAN COMPANY OF CANADA, LTD., TORONTO



Greater comfort
for postoperative
and postpartum patients

*abdominal distention and urinary retention
can often be prevented or promptly relieved
—with less need for uncomfortable enemas and catheters*

Urecholine.

Chloride
(Bethanechol Chloride)

'Urecholine' helps restore normal function after surgery and childbirth by increasing the muscular tone of the gastrointestinal and urinary tracts. Postoperative "gas" pains can frequently be prevented or promptly relieved—with less need for uncomfortable enemas, intubation, and suction apparatus. Micturition is facilitated—without the discomfort and risk of infection inherent in catheterization.

Administration and dosage: may be given prophylactically or therapeutically after surgery or childbirth. Usual oral dosage: 10 to 30 mg. three or four times daily. Usual subcutaneous dosage: 5 mg. three or four times daily.

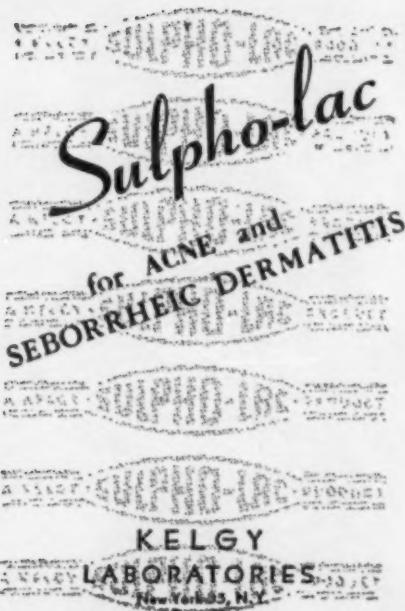
Other indications: gastric atony and retention following vagotomy and other surgical procedures; chronic functional urinary retention due to atony without obstruction; megacolon, including congenital megacolon (Hirschsprung's disease); certain cases of paralytic ileus; to counteract side effects of antihypertensive ganglionic blocking drugs.

Supplied: 5 mg. and 10 mg. tablets, bottles of 100;
1-cc. ampuls containing 5 mg.

Urecholine is a trade-mark of MERCK & CO., Inc.



MERCK SHARP & DOHME, DIVISION OF MERCK & CO., Inc. PHILADELPHIA 1, PA.



Apothecary Jars

THESE jars are handmade and painted at the famous Anton Herr Pottery Works in West Germany.

Money promptly refunded if not satisfactory.

Write for full color descriptive folder to:

MEDICAL TIMES OVERSEAS, INC.
1447 Northern Blvd., Manhasset, N. Y.

MODERN THERAPEUTICS —

—Continued from page 164a

sunflower-seed oil promotes the catabolism and excretion of cholesterol.

By H. Gordon, B. Lewis,
L. Eales, and J. F. Brock
The Lancet, No. 7009, Vol. II.

Meprobamate as Used by the General Practitioner

Worry, fear, and nervous tension frequently accompany a physical ailment and must be relieved if the physical symptoms are to benefit from appropriate therapy. Understanding and a sympathetic approach are indispensable, but medication is also needed. Meprobamate appears to influence both the emotions and the neuromuscular mechanism, so that anxiety is alleviated and muscle spasm, so often the sequel to emotional stress, is relieved. With a calmer outlook restored, the patient is better able to cooperate in the treatment of his physical ills. These complicating conditions contributing to the nervous tension were classed in the broad categories of arthritis, essential hypertension, the menopausal syndrome, nervous strain, psychological problems, and a general state of anxiety. For a period of 20 months, 88 private patients with various physical disorders were given meprobamate for adjunctive management of the emotional component. The routine dosage was 400 mg. to 1.6 Gm. daily, and the period of administration ranged from six to twenty months. The desired clinical effect was achieved in all cases. No side-effects were noted.

Victor J. Sprauer
International Record of Medicine,
171:130 (1958)

—Concluded on page 170a

MEDICAL TIMES

THERAPEUTIC VITAMIN B and C LEVELS

• IN CONVALESCENCE

• IN SEVERE VITAMIN DEPLETION

• IN DEBILITATING DISEASE

WITH
HIGH
POTENCY

THERA-COMBEX

FORMULA

Each Kapsel® contains:

Vitamin B ₁ (thiamine) mononitrate	.25 mg.
Vitamin B ₂ (riboflavin)	.15 mg.
Nicotinamide (niacinamide)	100 mg.
Folic acid	2.5 mg.
Vitamin B ₆ (pyridoxine hydrochloride)	.1 mg.
Vitamin B ₁₂ (crystalline)	.5 mcg.
Pantothenic acid (as sodium salt)	.10 mg.
Vitamin C (ascorbic acid)	150 mg.
Taka-Diastase® (aspergillus oryzae enzymes)	2½ gr.

Bottles of 100 or 1,000 Kapsels®

PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN

MODERN THERAPEUTICS

—Concluded from page 168a

Iproniazid for Depressions

In reporting his experience with the use of Iproniazid (Marsilid), the author recalls that elation over the dramatic results following its use at Sea View Hospital in 1951 changed to disillusionment when the extent of the side-effects became apparent, and the drug fell into disrepute and disuse. The author, in reinstating the use of iproniazid not only administered the drug to a group of his private patients who suffered with various types of depression but became his own guinea pig. In all cases, the amount of the drug used was greatly reduced. Of his own three-month experience, the Doctor states that aside from some minor complications such as momentary vertigo, ataxia, and

severe constipation, the drug proved to be a tranquilizer as well as a vitalizing agent. His general well being was improved, and his production was increased, since his capacity for work was greater. In the majority of the patients treated, the results have been excellent, only four patients having failed to show favorable progress. The depressed patient feels useless, incompetent and unhappy. Iproniazid seems to release certain vital capacities which had become inactive. It increases the appetite, the zest for living, and the ability to shoulder the strains and stress of modern life. The report further states that Iproniazid seems to be the most desirable and effective treatment for depressions, but caution must be used in its administration.

Samuel A. Sandler,
J. of Med. Soc. of N. J. 55:265 (1958)

ASCORBACAIN capsul^e FOR THE RAPID CONTROL OF PRURITUS

ASCORBACAIN



Formula:
Each Ascorbacaine Capsule
contains:
Ascorbic Acid . . . 150 mg.
Procaine
hydrochloride . . . 250 mg.



Oral Therapy: Easy to administer. May eliminate the need for ointments and bandaging.

Fast Action: Many patients experience almost immediate relief from itching. Effect of a single dose may last from four to six hours.

Indications: For the treatment of pruritic symptoms due to atopic dermatitis, antibiotic reactions, food urticaria, serum sickness, contact dermatitis, drug reactions and other allergic manifestations.

Dosage: One (1) Ascorbacaine Capsule every four (4) hours. Dosage should be adjusted to individual requirements.

NOTE: Professional samples and literature are available.

Testagar & co., inc.

Pharmaceutical Chemists
1354 W. Lafayette Blvd. Detroit 26, Michigan

MEDICAL TIMES

A workhorse
"mycin"
for
common
infections



respiratory infections

prompt,
high blood levels

consistently
reliable
and reproducible
blood levels

minimal
adverse reactions

With well-tolerated CYCLAMYCIN, you will find it possible to control many common infections rapidly and to do so with remarkable freedom from untoward reactions. CYCLAMYCIN is indicated in numerous bacterial invasions of the respiratory system—lobar pneumonia, bronchopneumonia, tracheitis, bronchitis, and other acute infections. It has been proved effective against a wide range of organisms, such as pneumococci, *H. influenzae*, streptococci, and many strains of staphylococci, including some resistant to other "mycins." Supplied as Capsules, 125 and 250 mg., vials of 36; Oral Suspension, 125 mg. per 5-cc. teaspoonful, bottles of 2 fl. oz.

new

CYCLAMYCIN®

Triacytolyeandomycin, Wyeth



Conforms to Code for Advertising



IS THIS YOUR PATIENT?

1.



EARLY POSTMENOPAUSE

Complains of low back pain, vague aches and fatigue
Posture is poor
No x-ray evidence of bone lesions

2.



LATER POSTMENOPAUSE

Back pain is severe, spreading to hips ("girdle pain")
Patient is round shouldered, walks with a stoop
X-ray reveals compression fractures of lower vertebrae

3.



70 AND OVER

Fracture of hip after a minor fall
X-ray reveals fracture of neck of femur
X-ray reveals compression fractures of lower lumbar vertebrae

These three patients have osteoporosis. Early diagnosis and treatment with "Formatrix" is important because osteoporosis is probably the only age change that can be averted. With "Formatrix" therapy, relief from the symptoms of *low back pain, vague aches and fatigue* may be obtained in as little as a few weeks. "Formatrix" supplies the essential materials to stimulate increased bone formation and prevent further loss of bone substance that leads eventually to loss of height, stooped posture, and disabling fractures.

The highest incidence of osteoporosis may be found among the 14,000,000 women in the U.S.A. who are 55 years of age and over. Some investigators claim that almost all women past the menopause will show some degree of osteoporosis; furthermore, if all these women were examined carefully, 50 per cent would show x-ray evidence of decreased bone mass.

Suspicion may be the handiest diagnostic tool since presenting symptoms vary from mild to severe and incapacitating pain, and no x-ray evidence of spinal degeneration is available until about 30 per cent of the bone matrix is lost. Between these two extremes there are other signs of estrogen deficiency such as *wrinkled and thinning skin, a tendency to appear older than stated years*; there may also be *hypercalciuria* when postmenopausal osteoporosis is complicated by acute osteoporosis of disuse.

Osteoporosis is primarily an atrophic condition of bone matrix formation and any factor that depresses osteoblastic activity or retards the formation of protein and connective tissue such as *prolonged immobilization, cortisone therapy, or malnutrition* will favor development of osteoporosis in both male and female.

5076



AYERST LABORATORIES
New York 16, N. Y. • Montreal, Canada

NEW

"FORMATRIX" contains three most essential bone building materials necessary for *matrix* formation, estrogen, androgen and vitamin C.

The estrogen component of "Formatrix" stimulates osteoblastic activity, thus aiding calcium and phosphorus deposition; it also imparts a feeling of "well-being." The anabolic action of methyltestosterone promotes the synthesis of protein and restores a positive

nitrogen balance. Together, these hormones have a greater effect on bone and protein metabolism than either alone, and side effects are minimized because of the opposing action of the two steroids on sex-linked tissues. Vitamin C plays an important role in formation of inter-cellular cement substance and amino acid synthesis. "Formatrix" has a large amount of vitamin C to aid in new bone matrix formation and to further help in the healing of fractures.

"FORMATRIX" - each tablet contains:

Conjugated estrogens equine ("Premarin")	1.25 mg.
Methyltestosterone.	10.0 mg.
Ascorbic acid.	400.0 mg.

Dosage: 1 tablet a day - In the female, three weeks of treatment with a rest period of one week between courses is recommended.

Supplied: Tablets, bottles of 60 and 500.

LITERATURE AVAILABLE ON REQUEST

1.



EARLY POSTMENOPAUSE

No x-ray evidence of bone lesion

2.



LATER POSTMENOPAUSE

X-ray reveals compression fracture of lower vertebrae

3.



70 AND OVER

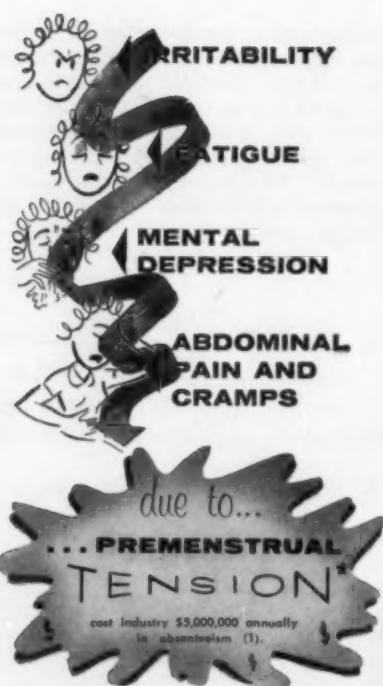
X-ray reveals fracture of neck of femur

TO RELIEVE LOW BACK PAIN - TO PROMOTE HEALING OF FRACTURES

in osteoporosis

'FORMATRIX'
for matrix formation

(Brand of Steroid - Vitamin Combination)



*These conditions respond to HVC (Hayden's Viburnum Compound), prescribed by physicians for over ninety years as a sedative and smooth muscle relaxant. Symptomatic relief is both prompt and prolonged.

Contains Viburnum opulus, dried stems, prickly ash, berries, gentian and softshell lizard alcohol. No increase in the results in the double doses.

HVC

HAYDEN'S VIBURNUM COMPOUND

USE COUPON TO REQUEST LITERATURE
AND PROFESSIONAL SAMPLES.

NEW YORK PHARMACEUTICAL CO.
Bedford, Mass., U.S.A.

Please send my sample to:

Name _____

Street _____

City _____ Zone _____ State _____

(1) Ferguson, J. H., *Archives Medicina de Cuba*, 7:189 (July-Nov.) 1936.

NEWS

AND NOTES

Cervical "Smear" Test May Be Needed Only Every Two Years

Routine "smear" examinations for cervical cancer may not be needed any oftener than every two years, a new Wisconsin study as suggested.

If a woman shows no sign of cancer after a cervical smear test and a thorough physical examination, she will probably remain free of cancer for at least two years, three Milwaukee researchers said.

"If these observations can be substantiated the application of the cytological examination will become greatly simplified, since it need not be repeated as often as has been recommended in the past," they said in the *Journal of the American Medical Association*.

They based their conclusions on a study of 15,389 women during a three-year period and on their impressions covering a seven-year period.

Occluded Neck Arteries Cause Many Strokes

A large percentage of strokes are caused by obstructions in the arteries of the neck, three Texas physicians said recently.

The obstructions, frequently resulting from hardening of the arteries, reduce the flow of blood to the brain, pro-

—Continued on page 176a

Perhaps the most effective sulfonamide available today for urinary infections

Continuing studies show that Elkasin is one of the safest and most useful antibacterial agents known today. For example: ". . . recently the results of sulfisomidine [Elkasin] therapy were evaluated in 55 additional patients with urinary tract infections. . . . 31 were cured; 4 showed a good response . . . With no attempt made to maintain an adequate daily fluid intake or alkalinization of the urine, no renal or hematopoietic toxicity occurred."*

For systemic infections, too, Elkasin therapy is sound therapy.

*Rutenburg, A. M.: Ann. New York Acad. Sc. 69:389 (Oct. 12) 1957.

Elkosin[®]

(sulfisomidine CIBA)

C I B A
SUMMIT, N. J.

SUPPLIED: TABLETS, 0.5 Gm. (white, double-scored).
SYRUP (strawberry-flavored), 0.25 Gm. per 4-ml. teaspoon.

2/2564MK



NEWS AND NOTES

—Continued from page 174a

ducing the symptoms of stroke—weakness, loss of speech and the ability to understand, visual disturbances, and mental dullness.

Other possible causes of stroke are blood clots, capillary hemorrhage, or blood vessel spasm in the brain.

Careful diagnosis of the cause of the stroke must be made in order to decide the proper treatment. Occlusions in the neck arteries are readily diagnosed through the use of x-ray.

Since the obstructions lie in the neck, they can be treated by "direct surgical attack," according to Drs. E. Stanley Crawford, Michael E. De Bakey, and William S. Fields, Baylor University

College of Medicine and the Methodist Hospital, Houston.

Writing in the *Journal of the American Medical Association*, they said the surgery may take the form of actual removal of the obstructed part of the artery or the creation of a grafted bypass around the occlusion.

They have surgically treated 43 patients who had occluded internal carotid, innominate, subclavian or left common carotid arteries. These arteries all lead through the neck to the head.

Since surgery signs suggestive of impending stroke have cleared in all patients, and episodes of recurrent strokes which had occurred in 14 patients before operation have not recurred in any patient, the doctors said.

—Continued on page 178a



For the constipated patient past forty

CHOBILE®



CHOBILE is biliary therapy—without cathartics. It increases motility of the intestinal tract and helps maintain colon water balance. This aids in preventing stool dehydration. Each CHOBILE tabule contains 1½ gr. cholic acid and 1½ gr. ketocholanic acids.

To serve your patients today—call your pharmacist for any additional information you may need to prescribe CHOBILE.

For prescription economy—prescribe CHOBILE in 50's.

Neisler

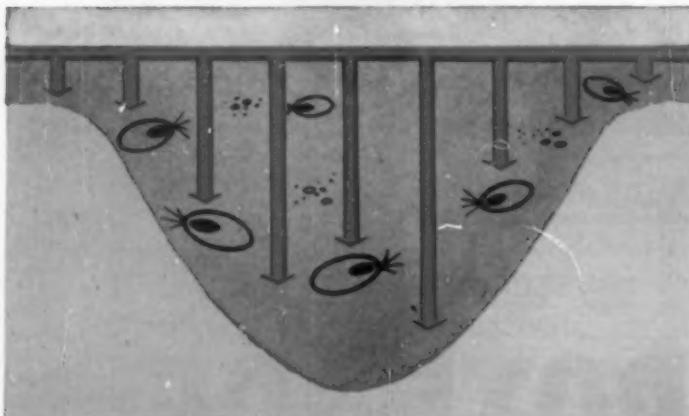
Irwin, Neisler & Co. Decatur, Illinois

*Breaks through the
treatment barrier of
vaginal leukorrhea*

SEEKS OUT and EXPLODES the NOMAD TRICHOMONAD

The trichomonad likes to wander. It hides under debris and mucus, and burrows deeply into the crypts and crevices^{1,2} of the vaginal vault "where the albumin normally present acts to protect many of the organisms from surface medication."¹

For this reason, leukorrhea has remained most obstinate until the introduction of Lycinate vaginal tablets.



Lycinate
vaginal tablets
penetrate
from without
then
explode the
trichomonads
from within

Lycinate, in addition to its surface active medicaments, contains lysing agents which carry the protozoacide-fungicide, Diiodohydroxyquin, through mucopurulent discharge to reach even deep-seated pathogens.

Once in contact, Lycinate dissolves cell membranes, denatures cell proteins, penetrates the pathogens, causing them to swell and explode.

Each tablet contains:

Diiodohydroxyquin.....	100 mg.
Sodium lauryl sulfate.....	5 mg.
Diocetyl sodium sulfosuccinate.....	5 mg.
Aluminum potassium sulfate.....	14 mg.
Lactose.....	380 mg.
Dextrose, anhydrous.....	850 mg.

1. Davis, C. H., and Grand, C. G.: Continued Studies on the Treatment of Trichomonas Vaginalis Infection, Am. J. Obst. & Gynec. 62:559 (Aug.) 1954.

2. Weiner, H. H.: Treatment of Trichomonas Vaginitis, Clin. Med. 5:25 (Jan.) 1958.

Supplied: Boxes of 50 with applicator

NEW *Lycinate*TM
VAGINAL TABLETS

LLOYD BROTHERS, INC. • CINCINNATI 3, OHIO

NEWS AND NOTES

—Continued from page 176a

"Sleep Cheats"

Many American are "sleep cheats."

They're persons with a late-to-bed pattern which results in a sustained sleep shortage.

These "sleep cheats" are cheating only themselves and are taking chances on losing their jobs, their marriages, and even their lives, according to an article in *Today's Health*.

Sleep cheats are not to be confused with insomniacs, although their symptoms may be the same.

"Sleep cheats can sleep, but they won't. They go to sleep all right, but they don't go to sleep early enough," the article said.

All sleep cheats suffer some impairment of health. They can't stagger on forever. They have to settle up or eventually collapse from sheer exhaustion.

The signs of a chronic sleep shortage in the order they appear are:

- Poor timing and muscular control.
- Strained vision, with objects shifting size and shape.
- Impaired hearing, and reduced sense of touch, temperature, and pressure.
- Increased irritability, depression, and discouragement.

Article Refutes Claims of Food Faddists

Americans actually have to go out of their way to avoid being well nourished.

Yet thousands of food supplement

—Continued on page 180a

↓ IMPOtENCE ↑ GLUKOR

GLUKOR effective in 85% of cases.¹
Glukor may be used regardless of age

and/or pathology . . . without side effects . . . effective in men in IMPOTENCE, premature fatigue and aging.² GLUTEST for women in frigidity and fatigue.³ Lit. available.

Research
Xupplies

Pine Station, Albany, N. Y.

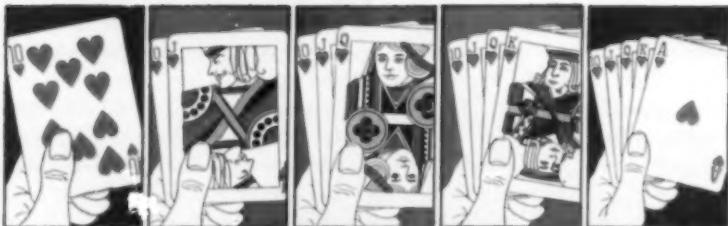
The original synergistically fortified chorionic gonadotropin. Dose 1 cc IM — Supplied 10 & 25 cc vials.

1. Gould, W. L.: Impotence, *M. Times* 84:302 Mar. '56.

2. Personal Communications from 110 Physicians.

3. Milhoan, A. W., *Tri-State Med. Jour.*, Apr. '58.

Reg. U. Pat. Off. Pat. Pend. © 1958



LEAVES NOTHING TO BE DESIRED



HYCOMINE®

Syrup

THE COMPLETE Rx FOR COUGH CONTROL

cough sedative / antihistamine / expectorant

- relieves cough and related symptoms in 15-20 minutes
- effective for 6 hours or longer • promotes expectoration
- rarely constipates • cherry-flavored

Each teaspoonful (5 cc.) of HYCOMINE contains:

Hycodeine®

Dihydrocodeine Bitartrate	5 mg.	6.5 mg.
(Warning: May be habit-forming)		
Homatropine Methylbromide	1.5 mg.	
Pyramine Maleate		12.5 mg.
Ammonium Chloride		60 mg.
Sodium Citrate		83 mg.

Adult Dosage: one teaspoonful q. 6 h. May be habit-forming.
Federal law permits oral prescription.



Literature on request
ENDO LABORATORIES
Richmond Hill 18, New York

U. S. Pat. 2,686,680

NEWS AND NOTES

—Continued from page 178a

salesmen are trying to convince people that improper diet is to blame for most disease and that it can be cured by taking food supplements.

The food supplement business is a multi-million dollar one. It could be considered a "mildly amusing confidence game" except that it is also highly dangerous, according to an article in *Today's Health*.

It is dangerous because persons with serious ailments neglect proper medical treatment in the hope that they can find a "cure in a capsule."

Dr. Bell said, "If you suspect a diet deficiency don't let quacks prescribe for you. Consult your physician. . . Eat sensibly, eat intelligently, eat economically—and for goodness sake, eat *food*."

Hypo-Allergenic Cosmetics

Young women with acne can now wear makeup and not aggravate their skin disorder. They can use some of the special hypo-allergenic cosmetics now on the market.

Foundations creams and lotions are useful camouflages for skin defects, yet standard brands invariably contain oil—the last thing which should be put on an oily skin.

The answer is a foundation without fatty materials, according to Mrs. Veronica Conley, secretary of the American Medical Association's Committee on Cosmetics.

Such a foundation also can contain the common drugs used to treat acne. Because they can be left on the skin day and night, this increases the effectiveness of medications, Mrs. Conley said in

—Continued on page 183a

whenever he starts to

CHEW

he's ready for **Delectavites**

*New vitamin-mineral supplement
in delicious chocolate-like nuggets*

Each Nugget contains:

Vitamin A	6,000 Units*
Vitamin C	1,000 Units*
Vitamin D	75 mg.
Vitamin E	3 Units†
Vitamin B-1	2.5 mg.
Vitamin B-2	2.5 mg.
Vitamin B-6	1 mg.
Vitamin B-12 Activity	.3 mcg.
Phenylalanine	.5 mg.
Ascorbic Acid	20 mg.
Biotin	.50 mg.
Boron	.12 mg.
Calcium Carbonate	125 mg.

Boron	0.1 mg.
Choline	0.1 mg.
Fluorine	0.1 mg.
Iodine	0.2 mg.
Magnesium	3.0 mg.
Manganese	1.0 mg.
Molybdenum	0.5 mg.
Phosphorus	2.5 mg.
Trace Minerals	0.5 mg.

*U.S.P. units
†U.S.P. units

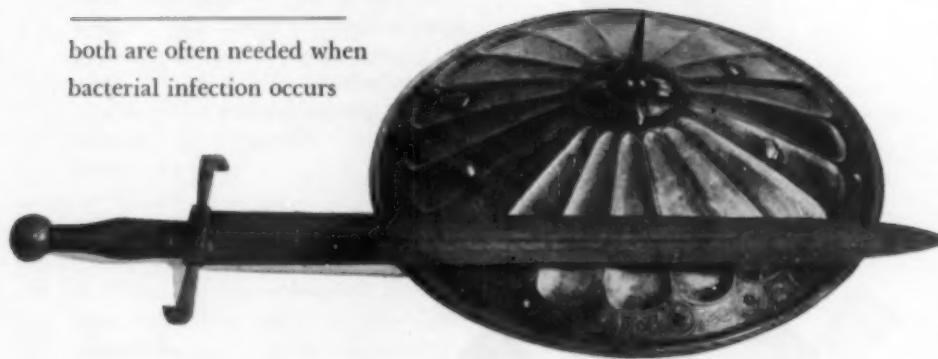


White

WHITE LABORATORIES, INC., KENILWORTH, N.J.

- prompt, aggressive antibiotic action
- a reliable defense against monilial complications

both are often needed when bacterial infection occurs



for a direct strike at infection

Mysteclin-V contains tetracycline phosphate complex

It provides a direct strike at all tetracycline-susceptible organisms (most pathogenic bacteria, certain rickettsias, certain large viruses, and *Endamoeba histolytica*).

It provides the new chemical form of the world's most widely prescribed broad spectrum antibiotic.

It provides unsurpassed initial blood levels — higher and faster than older forms of tetracycline — for the most rapid transport of the antibiotic to the site of infection.

for protection against monilial complications

Mysteclin-V contains Mycostatin

It provides the antifungal antibiotic, first tested and clinically confirmed by Squibb, with specific action against *Candida (Monilia) albicans*.

It acts to prevent the monilial overgrowth which frequently occurs whenever tetracycline or any other broad spectrum antibiotic is used.

It protects your patient against antibiotic-induced intestinal moniliasis and its complications, including vaginal and anogenital moniliasis, even potentially fatal systemic moniliasis.

MYSTECLIN-V

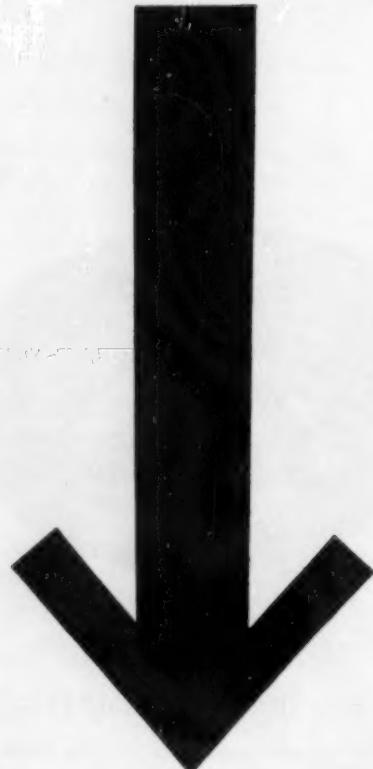
Squibb Tetracycline Phosphate Complex (Sumycin) and Nystatin (Mycostatin)

Capsules (250 mg./250,000 u.), bottles of 16 and 100. Half-strength Capsules (125 mg./125,000 u.), bottles of 16 and 100. Suspension (125 mg./125,000 u. per 3 cc.) 60 cc. bottles. Pediatric Drops (100 mg./100,000 u. per cc.), 10 cc. dropper bottles.



Squibb Quality — the Precious Ingredient

*MYSTECLIN®, *SUMYCIN® and *MYCOSTATIN® are Davis trademarks.



PENETRATES*



IN CONSTIPATION

TO SOFTEN STOOLS WITHOUT TISSUE DEHYDRATION
AND MAKE THEM MOVE WITHOUT STRAINING

SOFTENS FECES



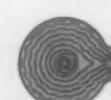
KONDREMUL®

COLLOIDAL EMULSION OF MINERAL OIL AND IRISH MOSS patch

ADDS FORMED BULK



EASES EVACUATION



PROVEN SAFE...EFFECTIVE • IN PREGNANCY • IN
CHILDHOOD • IN MIDDLE-AGED PATIENTS • IN ELDERLY
PATIENTS • THROUGH MORE THAN 25 YEARS OF USE

AVAILABLE in three pleasant-tasting formulas:

for the average patient

KONDREMUL (Plain)

containing 55% mineral oil. Bottles of 1 pint.

for more hypotonic cases

KONDREMUL WITH CASCARA

0.66 Gm. non-bitter Ext. Cascara per tablespoonful.
Bottles of 14 fl.oz.

for more resistant constipation

KONDREMUL WITH PHENOLPHTHALEIN

0.13 Gm. (2.2 gr.) phenolphthalein per tablespoonful.
Bottles of 1 pint.

patch THE E. L. PATCH COMPANY Stoneham, Massachusetts

70 YEARS OF SERVICE TO THE MEDICAL PROFESSION

*Unique encapsulation of millions of minute oil globules by Irish moss assures complete penetrant diffusion in stools.

NEWS AND NOTES

—Continued from page 180a

Today's Health, an A.M.A. publication.

Some 50 items including creams, lotions, nail polishes, lipstick, hair preparations, and suntan products are now available in hypo-allergenic form.

Available in a wide selection of fashionable colors and shades, they compare favorably in price with standard cosmetics, she said.

Maternal Deaths Halved

The proportion of women dying in childbirth has been reduced by more than half since 1946, two New York physicians said recently.

"The past few years have been a period of "phenomenal growth and accomplishments unmatched in the history of obstetrics," they said in the *Journal of the American Medical Association*.

According to the United States National Office of Vital Statistics, the number of deaths per 10,000 live birth has decreased from 11.6 in 1946 to 4 in 1956.

35,000 Physicians Take Graduate Training

More than 35,000 physicians last year took graduate medical training in 1,400 American hospitals, it was reported recently.

According to the 32nd annual report on graduate medical education prepared by the American Medical Association's Council on Medical Education and Hospitals, the number of medical school graduates taking further training continued to increase in 1957-58.

There were 10,198 graduates serving internships in 1957-58, an increase of

—Continued on page 184a



NEW 3-WAY "PICKUP"
FOR APPREHENSIVE AND/OR
HYPERTENSIVE PATIENTS

NEO-SLOWTEN

patch

A TRANQUILIZING COMBINATION

- relieves anxiety, irritation, fatigue
- reduces mild elevated blood pressure
- refreshes neural tone

EACH WHITE, SCORED TABLET CONTAINS:

Phenobarbital : : : : 16.2 mg. (1/4 gr.)
Warning: May be habit-forming

Reserpine : : : : 0.1 mg.

Thiamine hydrochloride : : : : 5.0 mg.

SUPPLIED: Bottles of 100 scored tablets.

patch THE E. L. PATCH COMPANY
Stoneham, Massachusetts

70 YEARS OF SERVICE TO THE MEDICAL PROFESSION

NEWS AND NOTES

—Continued from page 183a

305 over 1956-57, while 24,976 were serving residencies, an increase of 1,964 over the preceding year. The number of hospitals offering training increased from 1,372 to 1,400.

New York University-Bellevue Medical Center

With the construction of a new 600-bed University Hospital, the present development program of the New York University-Bellevue Medical Center will have been completed. Construction of the 19-story unit is scheduled to begin in January 1959. An additional gift of \$110,000 from the James Foundation of New York will release a similar

amount from the Samuel H. Kress Foundation which has pledged \$5,000,000 on a dollar-for-dollar matching plan toward the new unit.

Awards to University of Oregon Medical School

Grants from the U.S. Public Health Service of \$157,021 for research projects brought the total amount received for the first half of 1958 to \$475,385. Other gifts included \$24,100 from the National Science Foundation for research in neurology, \$43,728 from the Atomic Energy Commission for research in experimental medicine and biochemistry, \$15,000 from the Knights Templar Eye Foundation, \$50,555 from the Medical Research Foundation of

—Continued on page 186a

12 day treatment for
tenacious trichomonas



Quinettes

STOPS TRICHOMONAS AND MIXED LEUKORRHEA INFECTIONS IN OVER 90% OF CASES

Patients with estrogenic deficiency are more susceptible to trichomonas vaginitis, and more resistant to treatment. Quinettes provide estrogen topically, plus needed protozoacidal, antibacterial, and fungicidal action. Restores vaginal mucosa to normal, healthy state which resists infection and infestation.

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STORCK PHARMACEUTICALS, INC.

184a

FORMULA: Each Quinette insert contains:

Stilbestrol 0.1 mg.
Dihydroxyquinoline 1.5 gr.
Sulfadiazine 7.5 gr.
Sorbic Acid 4.0 mg.
Hyamine 4.0 mg.

In a rapidly spreading base buffered to pH 4.

With individual, sanitary, disposable "pink pencil" applicator. DOSE: 1 q. 12 h. high in fornix.

2326 Hampton Blvd.,
St. Louis 10, Missouri

MEDICAL TIMES



RATIONAL ADJUNCT TO SURGERY

Metabolic demands increase when the body is subjected to surgical procedures, burns, fractures and illness. Under such circumstances, restitution of depleted vitamin reserves will accelerate body repair. STRESSCAPS provide essential water-soluble vitamins in a professionally accepted formulation.

STRESSCAPS IN STRESS

- Infection • Physiologic Trauma • Endocrine Dysfunction
- Emotional Stress • Pre- and Postoperatively

Each Capsule Contains:

Thiamine Mononitrate (B ₁)	10 mg.
Riboflavin (B ₂)	10 mg.
Niacinamide	100 mg.
Ascorbic Acid (C)	300 mg.
Pyridoxine HCl (B ₆)	2 mg.
Vitamin B ₁₂	4 mcgm.
Folic Acid	1.5 mg.
Calcium Pantothenate	20 mg.
Vitamin K (Menadione)	2 mg.

Average Dose: 1-2 capsules daily.

*

STRESSCAPS

STRESS FORMULA VITAMINS **LEDERLE**



LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*Reg. U. S. Pat. Off.

NEWS AND NOTES

—Continued from page 186a

Oregon for studies in various departments, and \$17,600 from the Life Insurance Medical Research Fund to further research on neurohumoral control of kidney functioning.

A.M.A. Unveils New Aging Program

A promise of more useful and productive lives for the aging population has been made by the A.M.A.'s Committee on Aging.

This assurance was given to a medical society planning conference in Chicago as part of a twofold program of individual and community action to achieve these ends.

In summarizing three years of con-

centrated activity in the field of aging the committee placed great stress on individual action.

"The major scourges of aging man are largely the result of faulty diet, flabby bodies from poor hygiene, excessive fatigue, and aimless living," the committee said.

A plan for "positive health" was suggested by Dr. Edward L. Bortz, Philadelphia, a member of the A.M.A. committee, who cited the 10 basic needs for older persons:

- A balanced diet including more protein, vitamins, and fluids; less fats and calories.
- Regular elimination of waste products.
- Adequate rest of both mind and body.

—Continued on page 186a

From the first incision, the surgeon can be confident that his patient, when prepared with SULFASUXIDINE, has extensive protection against secondary infection, peritonitis, or abscesses from bowel pathogens.

Daily dosage: Adults—4½ to 6 tablets six times daily.

SULFASUXIDINE
SUCCINYL SULFATHIAZOLE

a "standard" in bowel surgery

MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC., PHILADELPHIA, PA.

the moment of confidence

TWO NEW PARAFLEX* PRODUCTS

FOR RHEUMATISM AND TRAUMATIC DISORDERS

PARAFON*

THE SPECIFIC MUSCLE RELAXANT PLUS
THE PREFERRED ANALGESIC

FOR ARTHRITIS

PARAFON*

with PREDNISOLONE

Effective and well tolerated on the practical dosage of only 6 tablets daily.

PARAFON and PARAFON with Prednisolone provide benefits that last for up to six hours.

PARAFON relieves pain, stiffness, and disability caused by rheumatism and traumatic disorders. PARAFON with PREDNISOLONE compounds this relief with anti-inflammatory action in treatment for arthritis.

supplied: PARAFON: Tablets, scored, pink, bottles of 50. Each tablet contains:

PARAFLEX Chlorazepate 125 mg., and TYLENOL® Acetaminophen 300 mg.

PARAFON with PREDNISOLONE: Tablets, scored, buff colored, bottles of 30.

Each tablet contains: PARAFLEX Chlorazepate 125 mg.

TYLENOL Acetaminophen 300 mg.; and prednisolone 1.0 mg.

precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing PARAFON with PREDNISOLONE.

*Reg. U.S. Pat. Off. and U.S. Prop. Regd.

McNEIL

McNeil Laboratories, Inc., Philadelphia, Pa.

NEWS AND NOTES

—Continued from page 186a

- Pursuit of interesting and specific recreational activities.
- A sense of humor, which is the best antidote for tension.
- Avoidance of excessive emotional tension which leads to personal ineffectiveness.
- Mutual loyalty of friends and family.
- Pride in a job.
- Participation in community affairs.
- Continued expansion of knowledge, wisdom, and experience, which add to maturity.

The role of the community in helping the aging was outlined by Dr. Frederick C. Swartz, Lansing, Mich., committee

chairman, in a six-part program. Designed to supplement individual health plans, the program calls for:

- Stimulation of a realistic attitude toward aging by all people.
- Extension of effective methods of financing health care for the aged.
- Expansion of skilled-personnel training programs and improvement of medical and related facilities for older people.
- Promotion of health maintenance programs and wider use of restorative and rehabilitative services.
- Amplification of medical and socio-economic research in problems of aging.
- Cooperation in community programs for senior citizens.

Kidney Stone Formation

Studies of the chemistry involved in the formation of kidney stones are being conducted at the Poliomyelitis Respiratory and Rehabilitation Center of Fairmont Hospital, an affiliate of Stanford University. Poliomyelitis patients so severely paralyzed that they must remain in bed or in an iron lung are likely to suffer with kidney stones which are caused not by the disease itself, but by the fact that the patient is immobilized. The suspected reason is the body's reaction to immobilization. In the immobilized patient loss of calcium from the bones occurs, and passes from the body via the urine. Since kidney stones are composed in large part of calcium, investigators believe that concentration of calcium in the urine and other measurable chemical factors are responsible for stone formation and growth. The exact chemistry of the urinary tract is not yet completely understood, but



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We print it!**

YOUR OWN PERSONALLY
DESIGNED CASE HISTORY FORMS AT
JUST ABOUT STOCK FORM PRICES

You design your form in rough
pencil sketch — we refine it to a
finished product.

Only we, the makers of famous
"Histacount" products, have the
know how and organization to
render this service at such low
prices.

You must be satisfied, or your
money back — no obligation.

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PRINTING COMPANY, INC.
14 HISTACOUNT BUILDING
NEW HYDE PARK N.Y.



- decongests nasal mucosa
- quiets cough reflex
- decreases bronchial spasm
- soothes irritation
- pleases the taste

dual antihistaminic action

...an important reason for prescribing

AMBENYL® EXPECTORANT

for relief of coughs due to colds or allergies

One important benefit of AMBENYL EXPECTORANT in the treatment of coughs due to colds or allergies is its potent antihistaminic action, accomplished through two agents: Benadryl,® noted for its antihistaminic and antispasmodic effects, and Ambodryl® for its high antihistaminic activity.

per fluid ounce:

Ambodryl hydrochloride (trisopropylbenzylamine hydrochloride, Parke-Davis)	24 mg.
Benadryl hydrochloride (diphenhydramine hydrochloride, Parke-Davis)	56 mg.
Dihydrocodeineone bitartrate	1/8 gr.
Ammonium chloride	8 gr.
Potassium guaiacolsulfonate	8 gr.
Menthol	1/8 gr.
Alcohol	3/8

dosage:

Every three or four hours
—adults, 1 to 2 teaspoonsful;
children, 1/2 to 1 teaspoonful.

Supplied in 16-ounce and
1-gallon bottles.

PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN



THE RATIONALE
FOR THE
USE OF VITAMINS
IN
FORESTALLING
INFECTIONS

Many clinicians believe that good nutrition plays a significant role in preventing bacterial infections, and that immunity depends on adequate vitamin levels. Tisdall¹ states that "a low intake of a number of vitamins, a low intake of minerals, and a change in the quality of protein can all lower resistance to infection."

Other studies show the important role of the B vitamins in antibody formation. Thus, *Nutrition Reviews*² reports: "Present evidence indicates that certain B vitamins, notably pyridoxine, pantothenic acid and folacin, play a significant role in antibody synthesis." According to Pollack and Halpern,³ "Under-nutrition leads to increased susceptibility to infection and decreased resistance to established disease." And "vitamin deficiency states also may adversely influence circulating antibodies."

Halpern⁴ reports that "good nutrition is important for optimal resistance to infection, for a superior tissue capability to cope with disease and injury, and for maximum antibody production . . . nutrition participates in the prophylaxis against most acute infections . . ."

And while MacBryde⁵ feels that evidence is lacking to support the view that a higher than normal intake of vitamins will improve resistance to infection, he also states: "Restoration of nutrition to normal exerts a favorable influence on practically all disease conditions . . . Often the outcome will depend more upon the correction of the malnutrition than upon any therapy directed toward the malady."

THERAGRAN

SQUIBB VITAMINS FOR THERAPY

*now expanded to include additional essential vitamins—
and at no extra cost to your patients*

Each Theragran Capsule supplies:

Vitamin A	25,000 U.S.P. units
Vitamin D	1,000 U.S.P. units
Thiamine Mononitrate	10 mg.
Riboflavin	10 mg.
Niacinamide	100 mg.
Ascorbic Acid	200 mg.
Pyridoxine Hydrochloride	5 mg.
Calcium Pantothenate	20 mg.
Vitamin B ₁₂ Activity Concentrate	5 mcg.

Dosage: 1 or more capsules daily as indicated.

Supply: Family Packs of 180, Bottles of 30, 60, 100 and 1,000.

Also Available: THERAGRAN Liquid, bottles of 4 ounces; THERAGRAN Junior bottles of 30 and 100 capsules; and THERAGRAN-M (Squibb Vitamin-Minerals for Therapy), bottles of 30, 60, 100 and 1,000 capsule-shaped tablets.

References: 1. Tisdall, F. F.: Clinical Nutrition, ed. by Julian, N.; Tisdall, F. F., and Cannon, F. R.; Paul B. Hoeber, Inc., New York, 1950, p. 748. 2. Nutrition Reviews, 15:47, (Feb.) 1957. 3. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 18. 4. Halpern, S. L.: Ann. N. Y. Acad. Science 63:147, (Oct. 20) 1953. 5. MacBryde, C. N.: Signs and Symptoms, J. B. Lippincott Co., Phila., 3rd Ed. 1957, p. 818.

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Announcing a schedule of MEDICAL-DENTAL HYPNOSIS SYMPOSIUMS for 1959

Jan. 16-18, San Francisco, Calif.
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clinical course for those with experi-
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cruise basis returning via S.S.
Matsonia.
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course.
June 21-23, Banff, Alberta, Canada.
Aug. 14-16, Salt Lake City, Utah.
October, London, England, on cruise
basis (Others to be arranged)
Fee—\$150.00, including luncheons.
Eligibility—Restricted to physicians,
dentists and psychologists.

Instructors

David B. Cheek, M.D., M. Erik Wright,
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Adequate instruction is given in the clinical
applications of hypnosis in medicine and
dentistry. The course consists of lectures,
discussions, demonstrations, and the practice
of induction of hypnosis. For full informa-
tion write

HYPNOSIS SYMPOSIUMS

1250 Glendon Ave., Suite 2, Los Angeles 24
Phone GR 88303

NEWS AND NOTES

—Continued from page 188a

studies along these lines are being con-
tinued with the aid of a grant of \$17,745
from the March of Dimes. In addition,
experiments are being conducted with
drugs that may combat the tendency of
calcium to crystallize and form stones.
Since kidney stones do not form when
the body fluids are acid, the effects of
various diets and chemicals on polio-
myelitis patients as a possible solution
to the problem are being tested.

Grants for Kidney Research

The U.S. Public Health Service has
granted a total of \$90,000 for a three
years' research project on kidneys at
the University of Louisville Medical
School. Basic research on the subject
started several years ago, will be aided
by the award. An Eastman Kodak
grant of approximately \$12,000 yearly
has financed this and other projects in
the past, and will continue to be used in
part for this work.

Research Fund Established

A bequest of \$31,869 by the late
Frank McCalla of Zenda, Kansas, will
create the Frank McCalla Medical Re-
search Fund. Income will be used for
research in any medical field, although
Mr. McCalla expressed a preference for
support of studies dealing with cancer
and heart disease.

William Smith Tillett Laboratories

At the New York University-Bellevue
Medical Center, research laboratories
comprising about 15 rooms and built
and equipped at a cost of \$180,000 pro-
vided by the U.S. Public Health Service

—Concluded on page 194a

MEDICAL TIMES

a new type of
effectiveness
in depression
and fatigue
states

5
References

1. Lemere, F., and Lassiter, J. H.: Am. J. Psychiat. 114:831 (Jan.) 1958.
2. Murphy, H. H., Jr., Jenney, E. H., and Pleister, C. C.: 2-Dimethylaminoethanol as a Central Nervous System Stimulant. Presented before Am. Soc. for Research in Nervous and Mental Disease, New York, Dec. 12-14, 1957. To be published.
3. Oettinger, L., Jr.: Presented before the American Encephalographic Society Meeting, Atlantic City, June 18, 1958. To be published. Journal of Pediatrics.

Dosage:
Initially, 1 tablet (25 mg.) daily in the morning. Maintenance dose, 1 to 3 tablets. For children, $\frac{1}{2}$ to 3 tablets. Full benefit may require two weeks or more of therapy.
"Deaner" is supplied in scored tablets containing 25 mg. of 2-dimethylaminoethanol as the ρ -acetamidobenzoic acid salt.

...Anti-Depressant
Deaner®

ρ -acetamidobenzoic acid salt of 2-dimethylaminoethanol

The effects of 'Deaner' are unlike those of other energizers. After coming on gradually, effects are prolonged...*free from* hyperirritability, jitteriness or emotional tension...*free from* excessive motor activity...*free from* loss of appetite...*free from* elevation of blood pressure or heart rate...*free from* sudden letdown on discontinuance of therapy.

'Deaner' a totally New Molecule

has proved to be of value in the alleviation of a wide variety of emotional disturbances.¹ It is indicated in

- chronic fatigue states
- mild depression
- chronic headache
- migraine
- neurasthenia
- behavior problems and learning defects in children

'Deaner' produces greater daytime energy, better ability to concentrate, and a more affable mood.² It promotes sounder sleep.³ In children it enhances adaptability and lengthens attention span.¹

Another **Riker** First
NORTHridge,
CALIFORNIA

the SOLUTION for your ALLERGY problems

• Diagnosis

• Therapy



Complete Allergy Service
From Solution to Syringe

Write for booklet #102
PORT WASHINGTON, N. Y.

Charcoal Therapy in Acne Vulgaris

**One hundred patients with Acne Vulgaris were treated with charcoal tablets orally. In all patients some improvement was seen . . . in seventy-six percent, it could be judged great . . . there were no side effects."

* "Charcoal Tablets in Acne Vulgaris," R. B. Lacksoner, M. D.—*Medical Times*, Vol. 88—\$9—Page 1033-FEB 1957.

Requa's Charcoal Tablets are also widely used to combat flatulence, intestinal fermentation and other minor gastric disorders. Their popularity rests upon their clinical effectiveness and safety in use. A valuable adjunct to your practice. Packed 100 and 250 per box. Now, also available in capsule form. REQUA'S ACTIVATED CHARCOAL—4 gr.—N. F.—vials of 30.

Clinical Samples and Literature upon request.

REQUA MFG. CORP., Box 3, Brooklyn 16, N.Y.

NEWS AND NOTES

—Concluded from page 192a

and the Commonwealth Fund, were dedicated to Dr. William Smith Tillett as "a symbol of his guiding principles that research in the problems of disease is essential to good medical care of patients and proper instruction of students and physicians."

Dr. Tillett is project director for research in the field of allergy and infectious diseases at New York University-Bellevue Medical Center. The Doctor and his associates received international fame for their discovery of streptokinase-streptodornase, known as SK-SD. They are enzymes which have been found to be highly effective in dissolving and eliminating products of long-standing chronic infections.

Dr. Ross L. McLean

Dr. Ross L. McLean has been appointed to the newly-created Chair of Tuberculosis and Pulmonary Diseases at the Emory University School of Medicine, Atlanta. Dr. McLean was formerly Director of Professional Services at the Veterans Administration Hospital in Baltimore, and an Assistant Professor of Medicine at Johns Hopkins University.

Dr. H. Houston Merritt

Dr. H. Houston Merritt, Director of the Neurology Service, has been appointed Acting Dean of the Faculty of Medicine of Columbia University, and Acting Vice-president in charge of medical affairs. In addition to this new post, Dr. Merritt will continue as Columbia's Professor of Neurology, and will also direct the Neurological Service at the New York Neurological Institute.



*Fast, potentiated
attack on...*

URINARY INFECTION

In just a matter of minutes URISED provides four way antibacterial action to relieve genitourinary irritation and smooth muscle spasm . . . to reduce pus cell count . . . to promote mucosal healing.

In just a matter of minutes URISED soothes ureteral and urethral spasticity . . . alleviates discomfort and irritation . . . restores normal urinary tonus and function.

In *systitis, urethritis, pyelitis, pyelonephritis, ureteritis, acute and chronic infections . . .* try this dual-powered, double-fast attack on the primary causes of urinary pain, burning, urgency, dysuria and frequency.

*samples and literature
to physicians on request*

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Physicians	Equipment
Locations	Practices
Equipment	MISCELLANEOUS

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BELLABULGARA TABLETS — Stabilized and Standardized Bulgarian Cure famous for successful treatment of Post-Encephalitic Parkinsonism—Sequela of Sleeping Sickness—Encephalitic Lethargia. Literature available on request. NAKASHEFF, Harbor Pharmacy, New York Avenue, Halesite, N. Y. PHONE Hamilton 7-9304.

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Beautiful handmade apothecary jars, imported from Germany. Wide assortment. Ideal for office decorations, lamp bases, vases, etc. For details write Box 1W, Medical Times.

From the first incision, the surgeon can be confident that his patient, when prepared with SULFASUXIDINE, has extensive protection against secondary infection, peritonitis, or abscesses from bowel pathogens.

Daily dosage: Adults—4½ to 6 tablets six times daily.

SULFASUXIDINE
SUCINYL SULFATHIAZOLE

a "standard" in bowel surgery

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in hypercholesterolemia . . .

You can consistently reduce elevated serum cholesterol without rigid dietary restrictions*

MONICHOL permits a full, balanced diet

without caloric imbalance created by intake of some cholesterol-lowering agents

without economic burden to your patient—pleasant tasting
MONICHOL is well suited for long-range therapy

"Therapy with polysorbate 80-choline-inositol complex
[MONICHOL] is practical and allows for full patient cooperation
in that there are no marked dietary restrictions."¹

1. Questions and Answers: *J.A.M.A.* 166:108 (Jan. 4) 1958.

Supplied: Bottles of 12 fl. oz.

Recommended Dosage: 1 teaspoonful q.i.d. or 2 teaspoonfuls b.i.d.

*For further information, write Professional Service Department,
Ives-Cameron Company, Philadelphia 1, Pa.



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MONICHOL®

Polysorbate 80-Choline-Inositol Complex,
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Normalizes Cholesterol Metabolism



for ...Severe **ACNE**

Clinically superior in severe acne vulgaris. 1, 2, 8.

REZAMID® Lotion (NSulfamyl-Lactamide 8.5%, Resorcin 2% and Sulfur Colloid 5%, "Dermik")

For acne vulgaris complicated by erythema and inflammation. 1, 2, 8.

CORT-ACNE™ Lotion (Hydrocortisone Alcohol 2.5%, NSulfamyl-Lactamide 8.5%, Resorcin 2%, and Sulfur Colloid 5%, "Dermik").

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DIAGNOSIS, PLEASE

(Answer from page 33a)

PANCREATIC CALCULI

Note numerous calcific densities conforming to the anatomic position of the pancreas on a preliminary film before the administration of opaque material. This can be confirmed in the lateral view after the stomach is opacified, by demonstrating the calculi posterior to the stomach.

WHAT'S THE DOCTOR'S NAME?

(Answer from page 65a)

The doctor is John Locke

WHAT'S YOUR VERDICT?

(Answer from page 41a)

The Court of Appeals affirmed the decision of the lower court:

"The duty of a physician to bring skill and care to the amelioration of the condition of his patient arises not only from the implied contract between the physician and his patient, but such duty also has its foundation in public considerations. Negligent failure to attend and treat a patient at a time when the need of treatment is known to the physician and there is an opportunity to apply proper treatment amounts to the same as negligent treatment and the physician is answerable for such failure."

Based on the decision of
COURT OF APPEALS OF GEORGIA



**to relieve
anxiety in your
cardiac patients**

A single 'COMPAZINE' SPANSULE capsule provides daylong protection against the emotional stress that may play an exacerbating role in coronary insufficiency and other cardiovascular conditions. Also, hypotensive effects are minimal and infrequent.

COMPAZINE* SPANSULE†

THE OUTSTANDING TRANQUILIZER IN THE UNIQUE
SUSTAINED RELEASE DOSAGE FORM • Also available:

Tablets, Ampuls, Multiple dose vials, Suppositories and Syrup.

Smith Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for prochlorperazine, S.K.F. †T.M. Reg.

U.S. Pat. Off. for sustained release capsules, S.K.F.

MEDICAL TIMES, DECEMBER, 1958

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(Butazolidin)	opposite page	(Mystolin...)	114a
(Dulcolax)	39a	(Novo-Bain)	123a
(Preidin)	opposite page	(Pectin "400")	20a
Hypnotic Symposiums		(Raudisil)	104a
Irwin, Nestler & Co.		(Theragran)	190a, 191a
(Cetilidin)	70a	Stork Pharmaceuticals, Inc. (Quinette)	191a
(Chloridin)	176a	Sunkist Growers Products Dept. (Bioflavonoids)	48a
Iver-Cameron Co.		Testagar & Co. (Asterbazine)	170a
(Cyclospasmol)	156a	Ujohn Co., The	
(Monichol)	167a	(Halofredin)	100a, 101a
(Peguline)	32a	(Medrol)	51a
Kelgy Laboratories (Sulpho-ize)	168a	(Orinase)	opposite page 71a; 71a through
Kinner & Co. (Celsol-Iron)	136a	80a;	opposite page 80a
Kremers-Ulfhake Co. (Amparone)	152a	(Panalba)	124a, 125a
Lakeside Laboratories, Inc. (Cantil, Tridal)	6a	Vanguard Pharmaceutical Corp. (Vanul)	88a
Lederle Laboratories		Wallace Laboratories	
(Ashredin)	63a	(Deprol)	46a
(Ashromycin-V)	36a, 37a	(Milpat)	117a
(Filbon)	163a	(Milprim)	14a
(Strescaps)	183a	(Mitolon)	40a
Lederle Laboratories, Inc., Thos. (Ben-Gay)	202a	(Mitolene)	41a
Lloyd Bros. Inc.		Warner-Chilcott Laboratories	
(Dundasite)	54a	(Bromydriol Spray and Drops)	118a
(Lycinate)	177a	(Chlorasep)	126a
McNeil Laboratories, Inc.		Westwood Pharmaceuticals (Festex)	84a
(Parafon, Parafon with Prednisolone)	167a	White Laboratories, Inc.	
Massengill Co., The B. E.		(Cerofert)	92a
(Lifitene)	opposite pages 38a, 39a	(Defectavite)	56a, 132a, 158a
(Mannitol, Phenyl)	opposite pages 138a, 139a	(Gitaligin)	35a
Merck Sharpe & Dohme Division of Merck & Co., Inc.		(Orabiotic)	12a
(Cathomycin)	88a, Cover 4	Wyeth Laboratories	
(Cremomycin)		(Aldrox 5A)	155a
(Decadron)	145a, 146a, 147a, 148a	(Cylame)	171a
(Diluri)	36a, 31a	(Equanil)	34a
(Neo-Hydrex Nasal Spray and Drops)	61a	(Pene-Vee Ciclid)	4a
(Neo-Nicotinol Ophthalmic)	60a, 61a	(Pene-Vee Sulfa)	103a
(Neothalidine)	60a, 61a	(Phenexpan Expectorant)	201a
(Sulfasuxidine)	120a, 120a, 192a	(S-M-A)	49a
(Urecholine)	167a	(Sparins)	104a
New York Pharmaceutical Co. (HVC)	174a	(Sulfase)	48a
Organon, Inc. (Cortrophin-Zinc)	Cover 3	(Wyanoids HC)	163a
Parke, Davis & Co.			
(Ambenyl Expectorant)	109a		

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Menthol-induced hyperemia plus high local concentration of salicylate has been recently rediscovered as one of the safest and most promptly effective remedies for rheumatoid discomfort due to exposure.



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¹Brusch, C.A., et al.: Md. State Med. J.; 5:36, 1956.

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A Summary Report on
CORTROPHIN®-ZINC
(Corticotropin-Alpha Zinc Hydroxide)

Description: A unique patented electrolytic process (developed by Organon research) produces a complex of *alpha* zinc hydroxide and corticotropin. This complex offers considerable advantages for practical ACTH therapy.

Characteristics: New Cortrophin-Zinc provides corticotropin of unsurpassed purity with low foreign protein content. This reduces the risk of sensitization reactions.

Since about 5% of the corticotropin is uncombined, onset of clinical response is rapid. But the balance, present as a complex of *alpha* zinc hydroxide, provides a prolonged action so that the effective time span of a single dose is usually several days. Injection of the new electrolytic Cortrophin-Zinc is virtually painless.

Pharmacology: A potent stimulator of cortical activity, Cortrophin-Zinc *does not depress* functioning of the suprarenal glands. Unlike the corticosteroids, adrenocorticotrophic hormone arouses the adrenal glands to produce *natural* steroids in natural proportions. In a 5-year study of patients on ACTH therapy, no case of adrenal or pituitary depression or atrophy has been observed. Because Cortrophin-Zinc is virtually painless on injection and its prolonged action obviates frequent injections, it is now practicable to use Cortrophin-Zinc in most of the indications where formerly reliance has been on corticosteroids. This freedom from apprehen-

sion of deleterious depressive effects permits clinical use of valuable hormone therapy on a broader scale than has been possible heretofore.

Clinical Uses and Dosage: The many published reports on the use of Cortrophin-Zinc as well as ACTH, in thousands of patients indicate its value in over 100 disorders. Most responsive have been: allergies and hypersensitivities, rheumatoid arthritis, bronchial asthma, serum sickness and inflammatory skin and eye diseases.

Dosage should be individualized, but generally initial control of symptoms is obtained with a single injection of 40 units of Cortrophin-Zinc daily, until control is evident. Maintenance dosage is generally 20 units (or less) twice a week.

Use of Cortrophin-Zinc with oral steroids is now recommended as a safety measure to supply the important suprarenal stimulation and lessen the hazard of atrophy. Periodic use of Cortrophin-Zinc is advocated with all steroid analogs, such as cortisone, hydrocortisone, prednisone, prednisolone, methylprednisolone, and triamcinolone.*

Supply: 5-cc vials containing 40 and 20 U.S.P. units of corticotropin per cc; 1-cc ampuls containing 40 and 20 U.S.P. units of corticotropin, with sterile disposable syringes.

*Write for complete literature and bibliography containing specific dosage schedules to:

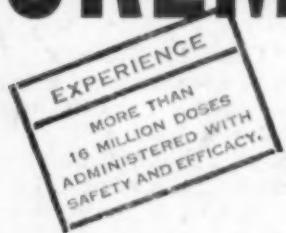
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